PRAXAIR

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October 16, 2008
Express Mail

Frank X. Cardiello
Office of Regional Counsel
U.S. Environmental Protection Agency, Region 2
290 Broadway, 17th Floor
New York, New York 10007-1866

190735

Subject: LCP Chemicals Superfund Site, Linden, Union County, New Jersey
Praxair Inc. (as successor to Linde Gases of the Mid-Atlantic) Response to USEPA Request

Dear Mr. Cardiello:

This letter is in response to Mr. Raymond Basso's August 6, 2008 letter to Mr. Richard Tisch requesting information from Praxair, Inc. (as successor to Linde Gases of the Mid-Atlantic). Please note that our answers relate to the former Union Carbide Corp. Linde Division (UCC) hydrogen repackaging facility in Linden, NJ which discontinued operations in 1990.

Answers are provided below by number in the same order as the questions provided in Mr. Basso's request. In 1998 Praxair responded to a prior section 104(e) request from Region II EPA regarding the LCP Chemicals Superfund Site. We will refer to that response as the "1998 Response".

1. "Describe all waste streams generated by Linde Gases at the LCP Chemicals Site..."

Please see answers 6 and 7 in the 1998 Response (Attached in Tab 1) regarding general information on the use of hazardous substances at the facility. Praxair was unable to locate any documentation related to waste generation, handling and disposal prior to 1988 when Linde initiated remedial activities at the site.

Small quantities of used oil from compressors (approximately 110 gallons/yr), pumps (approximately 5 gallons/yr), or truck motors were generated during operations and recycled. As we stated in the 1998 Response, used cylinder washing agent (sodium metasilicate) was discharged through a floor drain to the GAF treatment works. It is likely that any garbage generated was properly disposed off-site. Praxair has no further specific information on the volume or concentrations of hazardous substances, if any, in these wastes streams.

Enclosed in Tab 2 please find copies of the Annual Hazardous Waste Reports for this facility for years 1988 and 1989 which provides information on wastes generated and disposed after site remediation started. Other waste generation and disposal records from the remediation activities can be found in the ISRA files for case number 90367 in the NJDEP offices in Trenton, NJ.

2. "Did Linde's products, raw materials, intermediates or waste materials,..."

Although unsought, mercury was contained in the raw hydrogen gas which LCP transferred to Linde via pipeline. This hydrogen gas was tainted with mercury because of LCP's chlor-alkali process. Linde purified this hydrogen through a mercury knockout trap prior to containerizing the hydrogen gas for sale. Approximately 5 pounds per day of mercury was collected according to Praxair's earlier 1998 response letter. This mercury was sold. The LCP hydrogen gas transfer to Linde and the mercury removal process terminated in 1980. Praxair is not aware of any mercury in products or intermediates. Beginning in 1988, when site remediation and mercury decontamination began, materials contaminated with mercury were properly disposed of at SCA Chemical Services Inc. in Model City, NY. After 1988 recoverable mercury collected from the facility was manifested for recycling/reclamation at Bethlehem Apparatus in Hellertown, PA.

3. "Describe in detail:..."

a. Mercury contained in the LCP-provided hydrogen gas was removed through a knockout trap.
b. Praxair has no records of a separate mercury storage location from the knockout trap.
c. During facility operations until 1988, collected mercury was sold by employees and not disposed of. After 1988, recoverable mercury was manifested to a commercial recycler/reclaimer (Bethlehem Apparatus).
d. Please see documentation on disposal of mercury-related wastes after site remediation began in 1988 in Tab 2. Praxair has no records on removal and storage of mercury.

4. "Identify all employees that sold mercury..."

Praxair is unable to identify the employees who sold mercury from the hydrogen plant and has no documents regarding such sales.

5. "Describe how hazardous substances were handled as a housekeeping matter,..."

Please find a Housekeeping procedure from an old Linde Safety Manual in Tab 3. Praxair has no additional specific information regarding hazardous substances (including mercury) handling practices associated with housekeeping (e.g., sweeping, wiping, cleaning of equipment, floors, or roofs) during operations at the Linde facility.

6. "Provide process diagrams, Site drawings, sewer and waste water conveyance..."

Enclosed please find several site drawings, plot plans, etc. related to the Linde site in Tab 4.

7. "Describe in detail any activities that Linde performed to install, operate, service..."

Praxair has no information regarding the activities taken to install, operate, service and/or maintain the hydrogen storage tank and LCP pipeline and has no documentation with respect to such activities, or indicating that there were any releases, spills, or disposal of associated hazardous substances associated with such activities.

8. "Identify:"

a. The septic tank and leach field were located east of the former hydrogen charging plant. Please see enclosed site map in Tab 4 (Figure 2-General Facility Site Plan and Proposed Sampling Locations Union Carbide Corporation, Linde Division, Linden, New Jersey) that identifies the location of the septic tank and system on the property. NOTE: This drawing needs to be copied and will be provided shortly.

b. The septic system was in operation from 1957 until 1990.

c. Only sanitary waste was discharged to the septic system.

d. The septic tank/system was addressed in the ECRA investigation/remedial activities. Please see enclosed "Remedial Acton Report Linde Gases of the Mid-Atlantic Inc. Facility Linden, NJ ISRA Case No. 90367", June 1994 in Tab 5 for information on remedial activities associated with the septic system and leach field. The septic system was not decommissioned so that it would remain for use by a future tenant of the property.

9. "Describe any air emissions, including fugitive air emissions, from Linde's operations..."

We do not have any documents or information, including a copy of the former air permit that describes such emissions or processes.

a. The NJDEP may have a copy of the air permit.

b. See a. above.

c. See a. above.

d. According to the May 1990 ECRA Site Evaluation Submission (SES) Report for the Linde site, New Jersey Bureau of Air Pollution Control Permit # 060563 was in place from 01/27/1982-10/1992.

10. "Did Linde vent any of its building[s] to the outside when it operated at the LCP Site?"

a. Based on an older site drawing (See Tab 4), a 3 inch vent was present above a vacuum pump that terminated approximately 5 feet above the building (see Arrangement of Piping Plan Hydrogen Charging Plant, Linden, NJ). We do not know whether this vent was ever used. Note: This Plan will be submitted shortly after we obtain a copy of the plan.

b. This vent would likely have been designed to vent any hydrogen fugitive emissions/hydrogen pressure relief valves from the building to avoid flammable atmospheres. This vent, if ever used, would likely have been used after the hydrogen had been purified of any contaminants, including mercury.

c. Hydrogen

d. Hydrogen

11. "Did Linde utilize any tanks or vessels at its leasehold or the Site..."

The following tanks or vessels were used at the facility:

a. **Cylinder Caustic (Sodium metasilicate) Bath Sump**- A closed loop recirculating system for removing paint from cylinders. As stated in our 1998 Response, the cleaning solution was discharged through a floor drain to the GAF treatment works after use. Also see answer 12 below.
Non-contact cooling water sump- Collected non-contact cooling water. According to information available, this sump retained the cooling water and had no discharge.
Former 1000 Gallon Underground Storage No. 2 Fuel Oil Tank (near truck wash station, decommissioned in-place in 1974) – This tank was likely used for vehicle fueling.
Truck Wash Station Oil/Water Runoff Collection Drum (55 gallons)- Acted as a dry well to collect runoff from cylinder cooling, truck washing, and storm water. Also see answers 14-17 for more information related to this "drum".
2- 4000 gallon No. 2 Fuel Oil Underground Storage Tanks (closed in 1988) - These tanks were likely present for fueling of trucks.
Septic Tank & Leach Field- Managed sanitary wastes from the site. This system was addressed during the ECRA investigation/remediation. Also see answer 8 above.
Hydrogen Bladder Storage Tank –This tank was used to store gaseous hydrogen. It acted as an "equalization tank".
18,000 gallon liquid hydrogen storage tank - Installed after 1980 for storage of truck-delivered liquid hydrogen to provide product for filling gas cylinders.
275 Gallon above ground tank for storage of used oil – Stored used compressor and vacuum pump oil.

b. See 11a. above.

c. See 11a. above

d. See Tab 5 (June 1994 Remedial Action Report) for related closure information. Additional information is available in NJDEP ISRA (Case No. 90367) files for this site.

e. See Tab 5 (June 1994 Remedial Action Report) for sampling results and remediation documentation. Additional information is available in NJDEP ISRA (Case No. 90367) files for this site.

12. "Describe the constituents and amounts of the caustic bath solution..."

The caustic bath solution used by Linde to strip paint from gas cylinders was made from sodium metasilicate pellets (generally from 50 lb paper bags) that was dissolved in hot water. According to our 1998 Response, the used cleaning solution was discharged through a floor drain to GAF treatment works. No disposal records were available for any wastes generated by this process. The enclosed June 1994 ECRA Remedial Action Report (Tab 5) addresses investigations and remediation conducted by Praxair in the caustic bath sump area.

13. "Did Linde use cooling water in any of its processes when it was operating..."

Non-contact cooling water was used to cool compressors/pumps used in the hydrogen gas filling process. A small cooling tower was present on-site to continually recycle this water for cooling. We have no records or information regarding the amount of cooling water used daily.

cooling. We have no records or information regarding the amount of cooling water used daily. Water treatment chemicals (caustic #2-L and Brocide Formula 32 produced by Garrett-Callahan) were used in quantities of approximately 250 gallons annually. According to information available, this system was a closed system with no discharge.

Water was also sprayed on the outside of cylinders for cooling during the cylinder filling process (heat caused by gas compression). The amount of cooling water used daily for this process is not available. This water was provided by a public water supply and, to our knowledge, had no additives. This water was collected in a catch basin and runoff was discharged to the collection drum/dry well (see further information in answer 14 below).

a. See answer 13. above.
b. See answer 13. above.
c. See answer 13. above.
d. See answer 13. above.
e. See answer 13. above.
f. See answer 13. above.
g. See answer 13. above.

14. "Describe Linde's use of a run-off collection drum located..."

The run-off collection drum was a submerged perforated drum used as a dry well to discharge runoff from a catch basin collecting water that was sprayed on cylinders (sitting on trucks) to cool down the cylinders which became heated during the filling process. Some truck wash water and storm water would also enter the dry well. We have found no records of waste disposal from this collection drum prior to the ECRA investigation of this area.

15. "Explain the origin of the sludge found in the run-off collection drum..."

The small amount of sludge found in the 55 gallon perforated run-off collection drum during the 1990/1991 ECRA investigation likely came from site soils eroded by cylinder cooling water, truck washing, and storm water flowing on the property to the collection drum. The enclosed June 1994 ECRA Remedial Action Report (Tab 5) addresses investigations and remediation conducted by Praxair in the area of the run-off collection drum.

16. "Describe Linde's use of a drywell located on the leasehold where Linde operated..."

Please see answer 14 above.

17. "Identify the origin of the oil found in the drywell by Linde during the 1990/1991 ECRA..."

The oil found in the drywell during the 1990/1991 ECRA investigation was likely the result of truck wash waters from trucking operations in that area.

18. "Did Linde have any process water discharges from its operations..."

Please see answers 12 and 13 above for information on the caustic bath cleaning solution and cooling water. Linde also used small amounts of water for hydrostatic pressure testing of cylinders (to meet DOT requirements). Hydrostatic test water from a public water supply, to our knowledge, had no additives. According to the 1990 SES ECRA report, hydrostatic test water was discharged to LCP/GAF. It is also possible that compressor condensate (from atmospheric

concerning any compressor condensate discharge or its constituents.

a. See 18 above
b. See 18 above
c. Praxair has no records of permits associated with these discharges.
d. See 18 above

19. "Did Linde have any wastewater discharges from its operations when it was operating..."

Please see responses 8, 13, 14, and 18 above related to wastewater discharges from Linde operations. We have no records or knowledge of any other wastewater discharges from the site.

a. See 19 above.
b. See 19 above.
c. We have no records of permits related to wastewater discharges identified above.
d. See 19 above
e. We have no records of nor knowledge of any wastewater discharges from the Linde site to South Branch Creek or to ditches on-site. Cylinder cooling water, truck wash waters, and some storm water went to the dry well (runoff collection drum).

20. "Describe any discharges by Linde into the iron pipe..."

We have no information regarding whether there were any discharges into the iron pipe.

21. "Were the buildings in which Linde operated connected to any sewer pipes...?

Records indicate that the drains in the buildings in which Linde operated were associated with the caustic bath cylinder cleaning area and the hydrostatic cylinder test area. These wastewaters were discharged to the GAF treatment works. In an older Floor Plan (see Tab 4) for the Hydrogen Compressor building, "Hub Drains" are identified near the compressors. We have no information on the use of these "Hub Drains" or where they were discharged. Sanitary wastes were sent to the onsite septic system. We have no knowledge or records indicating that the buildings were connected to sewer pipes or drainage ditches. Note: This plan will be forwarded shortly after we obtain another copy of this plan.

22. "Describe the location, use and decommissioning, and any releases from,..."

Information on the location, use and decommissioning, and any releases from the former hydrogen bladder tank, elevated storage pad, and septic tank and leachfield located on the Linde Site are available in the June 1994 Remedial Action report (see Tab 5). Further information may be available in the ISRA files for case number 90367.

23. "Describe all Linde processes that used filter media and the..."

Records indicate that the only Linde process that used "filter media" was the hydrogen purification process that used activated alumina to remove moisture. Our records indicate that oxygen and VOC purification also occurred. It is likely that activated carbon was used to remove trace VOCs, and oxygen getters (see enclosed information in Tab 6) to remove trace oxygen concentrations from the hydrogen gas. We have no records regarding the amounts of activated alumina, activated carbon, or oxygen getters used or disposed or the location of such disposal, although the oxygen getters were likely transported to Linde's facility in East Chicago, IN for cleaning and

reactivation.

24. "Did the New Jersey Department of Environmental Protection issue any notices..."

Enclosed in Tab 7 please see information related to the New Jersey Department of Environmental Protection Notices of Violation (NOV), Administrative Orders (AO), or penalties assessed to the Linde site.

25. "Identify each person having knowledge of the facts relating to Linde's responses..."

The requested information for each person having some knowledge of the facts relating to the responses above is provided below:

James Merriam
Praxair, Inc.
Director, Environmental Services
200 Riverside Drive
Keasbey, NJ 08832
732-738-3437

Richard Tisch, Esq
Praxair, Inc.
Senior Group Council
39 Old Ridgebury Road
Danbury, CT 06810
203-837-2318

Alan Duva
Praxair, Inc.
Global Assessment Program Manager
(Former Acting Manager at Linde's Linden, NJ Site)
200 Riverside Drive
Keasbey, NJ 08832
732-738-3433

Nick DiFranco
Retired, former Praxair, Inc., Associate Director, Environmental Affairs
47 Chestnut Drive
Matawan, NJ 07747
(732) 566-1838

26. "Produce all documents containing any facts relating to Linde's response..."

The documents containing any facts related to the responses above are enclosed.

Should you have any questions concerning this response, please call me at 732-738-3437 or Richard Tisch at 203-837-2318.

Sincerely,

James Merriam
Director, Environmental Services
Praxair, Inc.

Cc: Richard Tisch Esq., Praxair
Jonathan Gorin, USEPA, Region 2, New Jersey Remediation Branch

Attachments

CERTIFICATION OF ANSWERS TO REQUEST FOR INFORMATION

State of

County of Somerset :

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document (response to EPA Request for Information) and all documents submitted herewith, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete, and that all documents submitted herewith are complete and authentic unless otherwise indicated. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I am also aware that I am under a continuing obligation to supplement my response to EPA's Request for Information if any additional information relevant to the matters addressed in EPA's Request for Information or my response thereto should become known or available to me.

NAME (print or type)
James N. Merriam

TITLE (print or type)
Praxair Inc. Director, Environmental Services

SIGNATURE
James N. Merriam

Sworn to before me this
day of 10/16/2008

Bernadine Wilson

Notary Public

BERNADINE WILSON
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires 12/21/2009

PRAXAIR

Praxair Inc.
200 Riverside Drive
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October 16, 2008
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Frank X. Cardiello
Office of Regional Counsel
U.S. Environmental Protection Agency, Region 2
290 Broadway, 17th Floor
New York, New York 10007-1866

Subject: LCP Chemicals Superfund Site, Linden, Union County, New Jersey
Praxair Inc. Response to USEPA Request

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This letter is in response to Mr. Raymond Basso's August 6, 2008 letter to Mr. Richard Tisch requesting information from Praxair, Inc. (as successor to Linde Gases of the Mid-Atlantic). Please note that our answers relate to the former Union Carbide Corp. Linde Division (UCC) hydrogen repackaging facility in Linden, NJ which discontinued operations in 1990.

Answers are provided below by number in the same order as the questions provided in Mr. Basso's request. In 1998 Praxair responded to a prior section 104(e) request from Region II EPA regarding the LCP Chemicals Superfund Site. We will refer to that response as the "1998 Response".

1. "Did UCC's products, raw materials, intermediates or waste materials,..."

Although unsought, mercury was contained in the raw hydrogen gas which LCP transferred to Linde (UCC) via pipeline. This hydrogen gas was tainted with mercury because of LCP's chlor-alkali process. Linde purified this hydrogen through a mercury knockout trap prior to containerizing the hydrogen gas for sale. Approximately 5 pounds per day of mercury was collected according to Praxair's earlier 1998 response letter. This mercury was sold. The LCP hydrogen gas transfer to Linde and the mercury removal process terminated in 1980. Praxair is not aware of any mercury in products or intermediates. Beginning in 1988, when site remediation and mercury decontamination began, materials contaminated with mercury were properly disposed of at SCA Chemical Services Inc. in Model City, NY. After 1988 recoverable mercury collected from the facility was manifested for recycling/reclamation at Bethlehem Apparatus in Hellertown, PA.

2. "Describe in detail:..."

a. Mercury contained in the LCP provided hydrogen gas was removed through a knockout trap.
b. Praxair's 1998 response indicated approximately 5 lbs. of mercury was collected daily from the knockout trap until 1981 when the LCP hydrogen pipeline supply ceased.
c. Praxair has no records of a separate mercury storage location from the knockout trap.
d. During facility operations, collected mercury was sold by employees and not disposed.

e. The hydrogen purification process to remove mercury was not related to the 18,000 gallon liquid hydrogen storage tank. That tank was installed in 1981 to provide hydrogen for cylinder filling after the LCP hydrogen pipeline supply ceased. The purification process for removal of mercury from the LCP provided hydrogen involved a mercury knockout trap.

f. The source of the diminishing quantities of mercury in the knockout traps after 1981 would likely have been any mercury retained in the hydrogen lines or hydrogen processing equipment after the LCP mercury contaminated hydrogen was no longer being provided to Linde.

g. Please see documentation on disposal of mercury related wastes after site remediation began in 1988 in Tab 2. Praxair has no records on removal and storage of mercury.

3. "Identify all employees that sold mercury..."

Praxair is unable to identify the employees who sold mercury from the hydrogen plant and has no documents regarding such sales.

4. "Describe how hazardous substances were handled as a housekeeping matter,..."

Please find a Housekeeping procedure from an old Linde Safety Manual in Tab 3. Praxair has no additional specific information regarding hazardous substances (including mercury) handling practices associated with housekeeping (e.g., sweeping, wiping, cleaning of equipment, floors, or roofs) during operations at the Linde facility.

5. "Provide process diagrams, Site drawings, sewer and waste water conveyance..."

Enclosed please find several site drawings, plot plans, etc. related to the Linde site in Tab 4.

6. "Describe in detail any activities that Linde performed to install, operate, service..."

Praxair has no information regarding the activities taken to install, operate, service and/or maintain the hydrogen storage tank and LCP pipeline and has no documentation with respect to such activities, or indicating that there were any releases, spills, or disposal of associated hazardous substances associated with such activities.

7. "Identify:"

a. The septic tank and leach field were located east of the former hydrogen charging plant. Please see enclosed site map in Tab 4 (Figure 2-General Facility Site Plan and Proposed Sampling Locations Union Carbide Corporation, Linde Division, Linden, New Jersey) that identifies the location of the septic tank and system on the property. NOTE: This drawing needs to be copied and will be provided shortly.

b. The septic system was in operation from 1957 until 1990.

c. Only sanitary waste was discharged to the septic system.

d. The septic tank/system was addressed in the ECRA investigation/remedial activities. Please see enclosed "Remedial Acton Report Linde Gases of the Mid-Atlantic Inc. Facility Linden, NJ ISRA Case No. 90367", June 1994 in Tab 5 for information on

remedial activities associated with the septic system and leach field. The septic system was not decommissioned so that it would remain for use by a future tenant of the property.

8. "Describe any air emissions, including fugitive air emissions, from Linde's operations..."

We do not have any documents or information, including a copy of the former air permit that describes such emissions or processes.

a. The NJDEP may have a copy of the air permit.

b. See a. above.

c. See a. above.

d. According to the May 1990 ECRA Site Evaluation Submission (SES) Report for the Linde site, New Jersey Bureau of Air Pollution Control Permit # 060563 was in place from 01/27/1982-10/1992.

9. "Did Linde vent any of its building[s] to the outside when it operated at the LCP Site?"

a. Based on an older site drawing (See Tab 4), a 3 inch vent was present above a vacuum pump that terminated approximately 5 feet above the building (see Arrangement of Piping Plan Hydrogen Charging Plant, Linden, NJ). We do not know whether this vent was ever used. Note: This Plan will be submitted shortly after we obtain a copy of the plan.

b. This vent would likely have been designed to vent any hydrogen fugitive emissions/hydrogen pressure relief valves from the building to avoid flammable atmospheres. This vent, if ever used, would likely have been used after the hydrogen had been purified of any contaminants, including mercury.

c. Hydrogen

d. Hydrogen

10. "Did Linde utilize any tanks or vessels at its leasehold or the Site..."

The following tanks or vessels were used at the facility:

a. **Cylinder Caustic (Sodium metasilicate) Bath Sump**- A closed loop recirculating system for removing paint from cylinders. As stated in our 1998 Response, the cleaning solution was discharged through a floor drain to the GAF treatment works after use. Also see answer 11 below.
Non-contact cooling water sump- Collected non-contact cooling water. According to information available, this sump retained the cooling water and had no discharge.
Former 1000 Gallon Underground Storage No. 2 Fuel Oil Tank (near truck wash station, decommissioned in-place in 1974) – This tank was likely used for vehicle fueling.
Truck Wash Station Oil/Water Runoff Collection Drum (55 gallons)- Acted as a dry well to collect runoff from cylinder cooling, truck washing, and storm water. Also see answers 13-16 for more information related to this "drum".

2- 4000 gallon No. 2 Fuel Oil Underground Storage Tanks (closed in 1988) - These tanks were likely present for fueling of trucks.
Septic Tank & Leach Field- Managed sanitary wastes from the site. This system was addressed during the ECRA investigation/remediation. Also see answer 7 above.
Hydrogen Bladder Storage Tank –This tank was used to store gaseous hydrogen. It acted as an "equalization tank".
18,000 gallon liquid hydrogen storage tank - Installed after 1980 for storage of truck-delivered liquid hydrogen to provide product for filling gas cylinders.
275 Gallon above ground tank for storage of used oil – Stored used compressor and vacuum pump oil.

b. See 10a. above.

c. See 10a. above

d. See Tab 5 (June 1994 Remedial Action Report) for related closure information. Additional information is available in NJDEP ISRA (Case No. 90367) files for this site.

e. See Tab 5 (June 1994 Remedial Action Report) for sampling results and remediation documentation. Additional information is available in NJDEP ISRA (Case No. 90367) files for this site.

11. "Describe the constituents and amounts of the caustic bath solution..."

The caustic bath solution used by Linde to strip paint from gas cylinders was made from sodium metasilicate pellets (generally from 50 lb paper bags) that was dissolved in hot water. According to our 1998 Response, the used cleaning solution was discharged through a floor drain to GAF treatment works. No disposal records were available for any wastes generated by this process. The enclosed June 1994 ECRA Remedial Action Report (Tab 5) addresses investigations and remediation conducted by Praxair in the caustic bath sump area.

12. "Did Linde use cooling water in any of its processes when it was operating..."

Non-contact cooling water was used to cool compressors/pumps used in the hydrogen gas filling process. A small cooling tower was present on-site to continually recycle this water for cooling. We have no records or information regarding the amount of cooling water used daily. Water treatment chemicals (caustic #2-L and Brocide Formula 32 produced by Garrett-Callahan) were used in quantities of approximately 250 gallons annually. According to information available, this system was a closed system with no discharge.

Water was also sprayed on the outside of cylinders for cooling during the cylinder filling process (heat caused by gas compression). The amount of cooling water used daily for this process is not available. This water was provided by a public water supply and, to our knowledge, had no additives. This water was collected in a catch basin and runoff was discharged to the collection drum/dry well (see further information in answer 13 below).

a. See answer 12. above.
b. See answer 12. above.
c. See answer 12. above.
d. See answer 12. above.
e. See answer 12. above.

f. See answer 12. above.
g. See answer 12. above.

13. "Describe Linde's use of a run-off collection drum located..."

The run-off collection drum was a submerged perforated drum used as a dry well to discharge runoff from a catch basin collecting water that was sprayed on cylinders (sitting on trucks) to cool down the cylinders which became heated during the filling process. Some truck wash water and storm water would also enter the dry well. We have found no records of waste disposal from this collection drum prior to the ECRA investigation of this area.

14. "Explain the origin of the sludge found in the run-off collection drum..."

The small amount of sludge found in the 55 gallon perforated run-off collection drum during the 1990/1991 ECRA investigation likely came from site soils eroded by cylinder cooling water, truck washing, and storm water flowing on the property to the collection drum. The enclosed June 1994 ECRA Remedial Action Report (Tab 5) addresses investigations and remediation conducted by Praxair in the area of the run-off collection drum.

15. "Describe Linde's use of a drywell located on the leasehold where Linde operated..."

Please see answer 13 above.

16. "Identify the origin of the oil found in the drywell by Linde during the 1990/1991 ECRA..."

The oil found in the drywell during the 1990/1991 ECRA investigation was likely the result of truck wash waters from trucking operations in that area.

17. "Did Linde have any process water discharges from its operations..."

Please see answers 11 and 12 above for information on the caustic bath cleaning solution and cooling water. Linde also used small amounts of water for hydrostatic pressure testing of cylinders (to meet DOT requirements). Hydrostatic test water from a public water supply, to our knowledge, had no additives. According to the 1990 SES ECRA report, hydrostatic test water was discharged to LCP/GAF. It is also possible that compressor condensate (from atmospheric moisture) was produced in small intermittent quantities. We have no records or information concerning any compressor condensate discharge or its constituents.

a. See 17 above
b. See 17 above
c. Praxair has no records of permits associated with these discharges.
d. See 17 above

18. "Did Linde have any wastewater discharges from its operations when it was operating..."

Please see responses 7, 12, 13, and 17 above related to wastewater discharges from Linde operations. We have no records or knowledge of any other wastewater discharges from the site.

a. See 18 above.
b. See 18 above.
c. We have no records of permits related to wastewater discharges identified above.

d. See 18 above
e. We have no records of nor knowledge of any wastewater discharges from the Linde site to South Branch Creek or to ditches on-site. Cylinder cooling water, truck wash waters, and some storm water went to the dry well (runoff collection drum).

19. "Describe any discharges by Linde into the iron pipe..."

We have no information regarding whether there were any discharges into the iron pipe.

20. "Were the buildings in which Linde operated connected to any sewer pipes...?

Records indicate that the drains in the buildings in which Linde operated were associated with the caustic bath cylinder cleaning area and the hydrostatic cylinder test area. These wastewaters were discharged to the GAF treatment works. In an older Floor Plan (see Tab 4) for the Hydrogen Compressor building, "Hub Drains" are identified near the compressors. We have no information on the use of these "Hub Drains" or where they were discharged. Sanitary wastes were sent to the onsite septic system. We have no knowledge or records indicating that the buildings were connected to sewer pipes or drainage ditches.
Note: This plan will be forwarded shortly after we obtain another copy of this plan.

21. "Describe the location, use and decommissioning, and any releases from,..."

Information on the location, use and decommissioning, and any releases from the former hydrogen bladder tank, elevated storage pad, and septic tank and leachfield located on the Linde Site are available in the June 1994 Remedial Action report (see Tab 5). Further information may be available in the ISRA files for case number 90367.

22. "Describe all Linde processes that used filter media and the..."

Records indicate that the only Linde process that used "filter media" was the purification process that used activated alumina to remove moisture. Our records indicate that oxygen and VOC purification also occurred. It is likely that activated carbon was used to remove trace VOCs, and oxygen getters (see enclosed information in Tab 6) to remove trace oxygen concentrations from the hydrogen gas. We have no records regarding the amounts of activated alumina, activated carbon, or oxygen getters used or disposed or the location of such disposal, although the oxygen getters were likely transported to Linde's facility in East Chicago, IN for cleaning and reactivation.

23. "Did the New Jersey Department of Environmental Protection issue any notices..."

Enclosed in Tab 7 please see information related to the New Jersey Department of Environmental Protection Notices of Violation (NOV), Administrative Orders (AO), or penalties assessed to the Linde site.

24. "Identify each person having knowledge of the facts relating to Linde's responses..."

The requested information for each person having some knowledge of the facts relating to the responses above is provided below:

James Merriam
Praxair, Inc.
Director, Environmental Services
200 Riverside Drive
Keasbey, NJ 08832
732-738-3437

Richard Tisch, Esq
Praxair, Inc.
Senior Group Council
39 Old Ridgebury Road
Danbury, CT 06810
203-837-2318

Alan Duva
Praxair, Inc.
Global Assessment Program Manager
(Former Acting Manager at Linde's Linden, NJ Site)
200 Riverside Drive
Keasbey, NJ 08832
732-738-3433

Nick DiFranco
Retired, former Praxair, Inc., Associate Director, Environmental Affairs
47 Chestnut Drive
Matawan, NJ 07747
(732) 566-1838

25. "Produce all documents containing any facts relating to Linde's response..."

The documents containing any facts related to the responses above are enclosed.

Should you have any questions concerning this response, please call me at 732-738-3437 or Richard Tisch at 203-837-2318.

Sincerely,

James Merriam

James Merriam
Director, Environmental Services
Praxair, Inc.

Cc: Richard Tisch Esq., Praxair
Jonathan Gorin, USEPA, Region 2, New Jersey Remediation Branch

Attachments

CERTIFICATION OF ANSWERS TO REQUEST FOR INFORMATION

State of

County of Somerset :

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document (response to EPA Request for Information) and all documents submitted herewith, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete, and that all documents submitted herewith are complete and authentic unless otherwise indicated. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I am also aware that I am under a continuing obligation to supplement my response to EPA's Request for Information if any additional information relevant to the matters addressed in EPA's Request for Information or my response thereto should become known or available to me.

NAME (print or type)
James N. Merriam

TITLE (print or type)
Praxair Inc. Director, Environmental Services

SIGNATURE
James N. Merriam

Sworn to before me this
day of 10/16/, 2008

Bernadine Wilson

Notary Public

BERNADINE WILSON
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires 12/21/2009

PRAXAIR

Praxair, Inc.
Industrial Avenue
P. O. Box 237
Keasbey, NJ 08832
Tel (732) 738-4000
Fax (732) 738-9586

May 5, 1998

VIA OVERNIGHT MAIL

Mr. Richard Ho
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, NY 10007

Re: LCP Chemical Site, Linden, New Jersey

Dear Mr. Ho:

This responds to Mr. Richard Caspe's February 27, 1998 Request for Information regarding the LCP Chemical Site. We appreciate the extension of time to respond until May 5 provided by Muthu Sundram, Esq.

We have answered the Request questions in the same order as the Request presented them.

1. a. Praxair, Inc.
   b. Edgar G. Hotard, President
   c. Delaware. Agent for process is Corporation Service Company, 830 Bear Tavern Road, West Trenton, NJ 08628.

2. The facility had no RCRA permits. The facility had EPA ID# NJD011392735.

3. See answer #3 in Union Carbide Corporation's April 8, 1998 letter from Roger Florio to Richard Ho. Available leases are enclosed. Other leases were apparently purged from corporate records.

4. See the Union Carbide letter and the leases referred to in answer 3 above as well as other attachments.

5. Union Carbide Corp. Linde Division (UCC) operated the Linden, NJ facility as a hydrogen filling and repackaging plant from 1957 to 1990. In January 1989, Union Carbide transferred the assets of the industrial gas operations to a wholly-owned subsidiary, Linde Gases of the Mid-Atlantic. The operations did not change and continued until the facility was decommissioned later in that year.

Hydrogen gas was delivered to the facility by pipeline from Linden Chlorine Products (LCP). The hydrogen was purified by use of traps to remove mercury which was transferred from LCP with the hydrogen. UCC did not request or want the mercury. LCP stopped supplying pipeline hydrogen in late 1980. At that time an 18,000 gallon hydrogen storage tank was installed on the property and liquid cryogenic hydrogen was delivered to the site by trailer. The liquid hydrogen was vaporized to its gaseous form and pumped by compressor through the purification system into DOT approved cylinders and tube trailers for delivery to customers. The product was analyzed for conformance with customer or sales specifications. Mixture of hydrogen and nitrogen or hydrogen and argon were also made upon customer request. In July 1988 the purification system was removed and the hydrogen was pumped by either the compressor or a high pressure pump.

Cylinder maintenance activities included the hydrostatic testing of cylinders in compliance with DOT cylinder specifications, valve removal, replacement and repair, internal and external cylinder wash and paint stripping, brush and/or roller painting of cylinders as needed.

Plant maintenance activities included the periodic dismantling andreassembly of the compressors to replace broken or worn parts, changing lubricating oil on the compressor and vacuum pumps, and welding, cutting, and brazing of cylinder filling manifolds and equipment.

Plant process equipment included three compressors, a gas holder, a purification system consisting of an oxygen removal unit, a hydrocarbon removal unit, dryers and a mercury trap, a small cooling tower for the recirculation of non-contact cooling water for the compressors, and an oily water separator.

Up until 1974 the facility also had a garage for the maintenance and repair of vehicles. Garage operations would have included changing engine oil, tire and brake maintenance, and minor engine repair.

The plant was manned by a supervisor who managed 3-4 employees. See the response to question 11 for names of management personnel.

6. Yes. No, the facility officially ceased operations on June 15, 1990.

We have answered the following questions a through c, although, since we answered the preceding question "No", we were apparently not required to answer them.

a)

Paint and paint thinners	1957 to 1990
Asbestos	1957 to 1990
Water treatment chemicals	1957 to 1990
Mercury	1957 to 1990
Sodium metasilicate	1957 to 1990
Diesel fuel	1957 to 1990
Compressor oil	1957 to 1990
Vacuum pump oil	1957 to 1990
Motor oil	1957 to 1974
Hydrogen	1957 to 1990
Nitrogen	1957 to 1990

b) Paint and paint thinners were used for cylinder maintenance activities.

Asbestos used as pipe insulation and divider wall (ransite board).

Water treatment chemicals (caustic #2-L and Brocide formula 32 produced by Garrett-Callahan) were used for efficient maintenance and operations of the cooling tower.

Diesel fuel used as vehicle fuel.

Mercury was a contaminant in the product stream from LCP and was removed by Union Carbide.

Sodium metasilicate was used as a cylinder wash agent by dissolving it in hot water.

Compressor oil was used for lubrication purposes.

Vacuum pump oil was used for pump operation.

Motor oil was used for lubrication purposes.

Hydrogen and nitrogen were products sold to customers.

c) Paint and thinner were used in quantities of ~100 gal. and ~60 gal., respectively, on an annual basis.

Water treatment chemicals were used in quantities of ~250 gal. annually.

Mercury was collected from the knockout trap inquantities of ~5 pounds daily up to 1981 when the pipeline supply of product from LCP ceased. It was collected in diminishing quantities thereafter while the trap was in service.

Compressor oil was used in quantities of ~110 gal. annually.
Use of vacuum pump oil was less than 5 gal. annually.
The quantity of motor oil used is not known. Use terminated in 1974 when garage operations ceased.

7. Paint and paint thinners were stored in 1 gal. and 5 gal. containers in a metal flammables cabinet. The paint and thinner were used to extinction.

Water treatment chemicals were stored in 55 gal. drums inside the plant. The chemicals were used to extinction.

The mercury collected from the trap was taken each day by the employees and sold by them until 1988. After 1988 recoverable mercury collected from the facility was manifested to a commercial recycler/reclaimer (Bethlehem Apparatus). Mercury in soil or other materials were disposed of at SCA Chemical Services. See #10.

Sodium metasilicate pellets were stored in 50 lb. paper bags or fiber drums depending on the amount purchased. The pellets were mixed with hot water to form the cleaning solution. After use the cleaning solution was discharged through a floor drain to GAF treatment works. GAF was a neighbor.

Used oil was collected in drums and stored outside the eastern side of the plant. Prior to 1981 a 275 gal. above-ground storage tank was installed for the collection of used oil. Drums continued to be used for the collection of oil as well. The oil would be picked up periodically by arecycler.

8. There were no lagoons or impoundments on the property. A 275 gal. above-ground tank was used for the collection and temporary storage of used oil.

a. The tank was installed prior to 1981. The exact date is not known.
b. The tank was used to collect and store used compressor and vacuum pump oil.
c. The tank was used to collect and store used compressor and vacuum pump oil.
d. The tank was taken out of service and removed from the facility when the plant ceased operation in 1990.

9. Documents are enclosed.

10. In June 1987 the decision was made to decommission and dismantle certain idle process equipment including two compressors, the gas purification equipment, and the gas holder and related piping from the gas supply pipeline from LCP. In the course of this decommissioning anddismantlement, quantities of waste material contaminated with mercury were generated. Work also included the removal of most of the building roof which was also found to be contaminated with mercury. Waste materials from this activity were disposed of at SCA Chemical Services at Model City, NY. Free mercury collected from these activities was collected and manifested to Bethlehem Apparatus inHellertown, PA.

On October 19, 1987 a report of soil contamination from the historic release of used oil was made to the N.J.D.E.P. IT Corp. was contracted by Union Carbide to conduct the cleanup at the site. The affected area was excavated and backfilled with clean fill material. The oil and mercury contaminated soil was transported to Envirosafe Services of Ohio, Oregon, OH. The N.J.D.E.P. has approved the actions taken by UCC.

The cessation of operations in June 1990 triggered the New Jersey Environmental Cleanup Responsibility Act (ECRA) requirements for site evaluation andremediation. In the course of compliance with the ECRA and the Industrial Site Recovery Act (ISRA), quantities of waste material contaminated with mercury, other heavy metals, and contaminants were generated over the course of remediation activities which lasted five years. The waste generation and disposal records from these activities are found in the ISRA files for case number 90367 in the N.J.D.E.P. offices in Trenton, NJ. The N.J.D.E.P. issued a No Further Action letter to Linde Gases of the Mid-Atlantic on June 20, 1995 indicating satisfactory completion of the ECRA/ISRA requirements.

11. Nicholas A. DiFranco, 47 Chestnut Drive, Matawan, NJ 07747. Phone: 732-566-1838. Manager, Environmental Affairs. Beginning in 1992 managed the ECRA/ISRA process for plant decommissioning.

Fred Galvan, 12117 Shady Forest Drive, Riverview, FL 33568. Phone: 813-677-2371. Assistant Region Manager, Eastern Region, Linde Division

John Crane, RD#I, Box 458, Van Sickle Road, Augusta, NJ 07822. Phone: 201-383-0685. Linde Plant Manager.

- Yahya Bashir, Retired, Linden Plant Supervisor.

- IT Corporation, 200 Cottontail Lane, Somerset, NJ 08873-1248. Phone: 732-469-5599. Environmental Consultant which conducted the site cleanup and ECRA/ISRA process.

- Richard G. Tisch, Senior Group Counsel, Praxair, Inc., 39 Old Ridgebury Road, Danbury, CT 06810-5113. Phone: 203-837-2318.

12. See the attached documents.

13. I am not aware of any.

14. We are uncertain of the answer to this question and are reviewing available records.

15. None of the business entities listed in response to question 4 filed for bankruptcy.

16. In the course of conduct of ISRA case 90367 by Linde Gases of the Mid-Atlantic, the New Jersey Department of Environmental Protection (NJDEP) alleged that heavy metal contamination found in the soils on the Linde leasehold was the consequence of site operations. Linde responded to this allegation, in part, by conducting a limited review of the DEP's own files. The results of this review are compiled in a September 30, 1992 letter from Mr. Nicholas A. DiFranco to Mr. Joseph Goliszewski, the ISRA case manager (document enclosed). In summary, the findings of this file review indicated that metals contamination at the LCP Chemical site (in its entirety) was due to fill placed on the site long before Union Carbide's tenancy on the property; and the operations conducted on the UCC leasehold were unrelated in any way to then existing heavy metals contamination. The UCC review concluded -- and was not rebutted by NJDEP -- that the UCC operations did not generate any heavy metals on the UCC leasehold or elsewhere on the LCP Chemical site except for the mercury contamination sent by LCP Chemical with the hydrogen to UCC.

Since 1919 GAF Chemicals Corporation and its predecessors have owned a 125 acre chemical manufacturing site adjacent to LCP Chemical. Fill material on the chemical site is believed to have been taken from the GAF site. See Exhibit 5 of Nick DiFranco's September 30, 1992 letter to Joseph Goliszewski, NJDEP, attached hereto.

17. We have been unable to locate any relevant documents except for those enclosed.

18. Nicholas A. DiFranco, 47 Chestnut Drive, Matawan, NJ 07748, 732-566-1838, Manager, Environmental Affairs, Praxair, Inc., has personal knowledge of the answers.

19. John Crane, Richard Tisch.

Note: NJDEP has voluminous files with respect to Union Carbide's tenancy and the extensive remediation performed by UCC, and we urge the EPA to consult with the NJDEP and review its files.

20. We have not signed the Certification of Answers because EPA lacks legal authority under CERCLA to require that this certification be executed.

Very truly yours,

Nicholas A. DiFranco

cc: Richard G. Tisch, Esq. (w/att.)
Roger Florio, Esq., Union Carbide, (w/o att.)

linden2.sam/rgt

LINDE GASES
OF THE
MID-ATLANTIC, INC.
308 Harper Drive
Moorestown, NJ 08057
(609) 778-6200

FILE Linden

LINDE

May 7, 1990

New Jersey Department of Environmental Protections
Division of Hazardous Waste Management
401 East State Street - Fifth Floor
CN 028
Trenton, New Jersey 08625

Attention: Manifest Section - Annual Reports

RE: Annual Waste Generator Report for EPA I.D. No. NJD011392735

Dear Sirs:

Please find enclosed the 1989 Annual Waste Generator Report for our facility located at Foot of South Wood Avenue in Linden, New Jersey. Also, enclosed is a check in the amount of $200.00 to cover the associated reporting fee. I trust you'll find the report consistent with your requirements. Should you have any questions and/or require additional information, please contact me at the above address and/or (609) 778-6338.

Very truly yours,

R.A. O'Neal
Environmental Coordinator
Package Gases and Distributors

RAON:sg
Enclosures

cc: Y. Bashir
J.R. Crane
N.A. DiFranco
C.R. Koch

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989
CERTIFICATION FORM

ITEM 1 USEPA Identification Number: NJD011392735

ITEM 2 Generator (Company) Name: LINDE GASES OF THE MID-ATLANTIC, INC.

ITEM 3 Contact Person: Y. Bashir

ITEM 4 Phone Number: (201) 862-2422

ITEM 5 Certification:

I certify that the information given in this annual report is true, accurate and complete.

Yousuf A Bashir (Print or type name) Yusuf Bashir (Signature) 5/7/90 (Date)

ITEM 6

A ☐ This site (company) generated less than 1.33 tons of hazardous waste for the calendar year 1989 (No Fee)

B [XX] This site (company) generated greater than 1.33 tons of hazardous waste but less than 10 tons of hazardous waste during the calendar year 1989 (Fee $200)

C ☐ This site (company) generated greater than 10 tons of hazardous but less than 100 tons of hazardous waste during the calendar year (Fee $300)

D ☐ This site (company) generated greater than 100 tons of hazardous waste during the calendar year (Fee $400)

ITEM 7 Federal Vendor Identification Number

13-2875638

* Please submit check with your completed report.

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989
-REPORT FORM-

1. Generator Name
   Linde Gases of The Mid-Atlantic, Inc.
2. USEPA ID Number
   NJD011392735
3. Site Address
   Foot of South Wood Avenue
   Linden, NJ 07036
4. Transporter Name
   #1- Chemical Waste Management of New Jersey, Inc.
   #2- Price Trucking Corp.
5. Transporter USEPA ID Number
   #1 - ILD099202681
   #2 - NYD046765574
6. TSD Facility Name
   Chemical Waste Management, Inc. (Emelle Facility)
7. TSD Facility EPA ID Number
   ALD000622464
8. TSD Address
   Alabama Highway 17 at Mile Marker 163
   Emelle, Alabama 35459
9.

A.) Waste Number (I)	B.) Waste Description (11)	C.) DOT Haz Class (11 or J)	D.) Total Quantity (13)	E.) Units (14)
X726	Waste Combustible Liquid, N.O.S.	Combustible Liquid (NA1993)	330	Gallons

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTAL quantity manifested for each waste type

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989
-REPORT FORM-

1. Generator Name LINDE GASES OF THE MID-ATLANTIC, INC.

2. USEPA ID Number NJD011392735

3. Site Address Foot of South Wood Avenue
Linden, NJ 07036

4. Transporter Name IT Corporation

5. Transporter USEPA ID Number NJD986568574

6. TSD Facility Name Chemical Waste Management of New Jersey, Inc.

7. TSD Facility EPA ID Number NJD089216790

8. TSD Address 100 Lister Avenue
Newark, NJ 07105

9.

A.) Waste Number (I)	B.) Waste Description (11)	C.) DOT Haz Class (11 or J)	D.) Total Quantity (13)	E.) Units (14)
D009	RQ Hazardous Waste Solid, N.O.S. (Mercury Contaminated Debris)	ORM-E (NA9189)	2400	Pounds
X726	Waste Combustible Liquid, N.O.S.	Combustible Liquid (NA1993)	119	Gallons

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTAL quantity manifested for each waste type

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989
- REPORT FORM -

1. Generator Name LINDE GASES OF THE MID-ATLANTIC, INC.

2. USEPA ID Number NJD011392735

3. Site Address Foot of South Wood Avenue
Linden, NJ 07036

4. Transporter Name Chemical Waste Management of New Jersey, Inc.

5. Transporter USEPA ID Number ILD099202681

6. TSD Facility Name Chemical Waste Management of New Jersey, Inc.

7. TSD Facility EPA ID Number NJD089216790

8. TSD Address 100 Lister Avenue
Newark, NJ 07105

9.

A.) Waste Number (I)	B.) Waste Description (11)	C.) DOT Haz Class (11 or J)	D.) Total Quantity (13)	E.) Units (14)
D002	RQ Waste Alkaline Liquid, N.O.S.	Corrosive Material (UN1719)	85	Gallons

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTAL quantity manifested for each waste type

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1989
WASTE SUMMARY FORM

Generator (Company) Name

Linde Gases of The Mid-Atlantic, Inc.

US EPA ID Number

NJD011392735

Directions

Please indicate below the total quantity of hazardous waste manifested during the 1989 report year for each unit of measure. Enter the units of measure as they appeared in item #14 of the manifest. Do not convert one form of unit of measure to another.

534 _____ G - Gallons (liquids only)

2400 _____ P - Pounds

_____ T - Tons

_____ Y - Cubic Yards

_____ L - Liters (Liquids only)

_____ K - Kilograms

LINDE GASES
OF THE MID-ATLANTIC

308 Harper Drive
Moorestown, NJ 08057
609-778-6200

November 22, 1989

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
401 East State Street - Fifth Floor
CN 028
Trenton, New Jersey 08625

ATTENTION: Manifest Section - Annual Reports

RE: ANNUAL WASTE GENERATOR REPORT
FOR EPA I.D. NUMBER NJD011392735

Dear Sirs,

Please find enclosed the 1988 Annual Waste Generator Report for our facility located at the Foot of South Wood Avenue in Linden, New Jersey. Also enclosed is a check in the amount of $400.00 to cover the associated reporting fee. I trust you'll find the report consistent with your requirements. Should you have any questions and/or require additional information, please contact me at (609) 778-6338.

Very truly yours,

R.A. O'Neal

R.A. O'Neal
ENVIRONMENTAL AFFAIRS COORDINATOR
PACKAGED GASES AND DISTRIBUTORS

Enclosure
RAON/amr

CC: Y. Bashir
J.R. Crane
N.A. DiFranco
C.R. Koch

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1988
CERTIFICATION FORM

ITEM 1 USEPA Identification Number: NJD011392735

ITEM 2 Generator (Company) Name: LINDE GASES OF THE MID-ATLANTIC, INC.

ITEM 3 Contact Person: Y. Bashir

ITEM 4 Phone Number: (201) 862-2422

ITEM 5 Certification:

I certify that the information given in this annual report is true, accurate and complete and that I have received the following guide, "GENERATOR'S GUIDE TO UNDERSTANDING THE NEW JERSEY HAZARDOUS WASTE REGULATIONS".

Y. Bashir		November 21, 1989
(Print or type name)	(Signature)	(Date)

ITEM 6

A ☐ This site (company) generated less than 1.33 tons of hazardous waste for the calendar year 1988 (No Fee)

B ☐ This site (company) generated greater than 1.33 tons of hazardous waste but less than 10 tons of hazardous waste during the calendar year 1988 (Fee $200)

C ☐ This site (company) generated greater than 10 tons of hazardous but less than 10(tons of hazardous waste during the calendar year (Fee $300)

D ☒ This site (company) generated greater than 100 tons of hazardous waste durin(the calendar year (Fee $400)

ITEM 7 Federal Vendor Identification Number

13-2875638

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1988
- REPORT FORM -

1. **Generator Name** LINDE GASES OF THE MID-ATLANTIC, INC.

2. **USEPA ID Number** NJD 011392735

3. **Site Address** Foot of South Wood Avenue
Linden, NJ 07036

4. **Transporter Name** Freehold Cartage, Inc.

5. **Transporter USEPA ID Number** NJD054126164

6. **TSD Facility Name** SCA Chemical Services, Inc.

7. **TSD Facility EPA ID Number** NYD049836679

8. **TSD Address** 1550 Balmer Road
Model City, NY 14107

9.

Waste A.) Number (I)	Waste B.) Description (11)	DOT Haz C.) Class (11 or J)	Total D.) Quantity (13)	E.) Units (14)
D009	RQ Hazardous Waste Solid, N.O.S. (Mercury Contaminated debris)	ORM-E (NA 9189)	297	Yards

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTAL quantity manifested for each waste type.

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1988
- REPORT FORM -

1. **Generator Name** LINDE GASES OF THE MID-ATLANTIC, INC.

2. **USEPA ID Number** NJD011392735

3. **Site Address** Foot of South Wood Avenue
Linden, NJ 07036

4. **Transporter Name** I.T., Corporation

5. **Transporter USEPA ID Number** PAD002390961

6. **TSD Facility Name** Bethlehem Apparatus Company, Inc.

7. **TSD Facility EPA ID Number** PAD002390961

8. **TSD Address** Hellertown, PA

9.

Waste A.) Number (I)	Waste B.) Description (11)	DOT Haz C.) Class (11 or J)	Total D.) Quantity (13)	E.) Units (14)
D009	RQ Waste Mercury Metallic	ORM-B (NA 2809)	526	P

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTAL quantity manifested for each waste type.

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1988
- REPORT FORM -

1. **Generator Name** LINDE GASES OF THE MID-ATLANTIC, INC.

2. **USEPA ID Number** NJD011392735

3. **Site Address** Foot of South Wood Avenue
Linden, NJ 07036

4. **Transporter Name** American Industrial Marine Service

5. **Transporter USEPA ID Number** NJD981873664

6. **TSD Facility Name** SCA Chemical Services, Inc.

7. **TSD Facility EPA ID Number** NYD049836699

8. **TSD Address** 1550 Balmer Road
Model City, NY 14107

9.

Waste A.) Number (I)	Waste B.) Description (11)	DOT Haz C.) Class (11 or J)	Total D.) Quantity (13)	E.) Units (14)
D009	RQ Hazardous Waste Solid, N.O.S. (Mercury Contaminated Debris)	ORM-E (NA 9189)	90	Yards

NOTE: For each combination of transporter and treatment, storage and disposal facility (TSDF), list the TOTAL quantity manifested for each waste type.

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1988
WASTE SUMMARY FORM

Generator (Company) Name LINDE GASES OF THE MID-ATLANTIC, INC.

US EPA ID Number NJD011392735

Directions

Please indicate below the total quantity of hazardous waste manifested during the 1988 report year for each unit of measure. Enter the units of measure as they appeared in item #14 of the manifest. Do not convert one form of unit of measure to another.

_____ **G - Gallons (liquids only)**

526 **P - Pounds**

_____ **T - Tons**

497 **Y - Cubic Yards**

_____ **L - Liters (Liquids only)**

_____ **K - Kilograms**

Conversions for page # 4:

Tons = Gallons (G) x $\frac{8.34}{2000}$

= Pounds (P) divided by 2000

= Cubic Yards (Y) x $\frac{1684.8}{2000}$

= Liters (L) x $\frac{2.203}{2000}$

= Kilograms (K) x $\frac{2.204}{2000}$

II. HOUSEKEEPING

HOUSEKEEPING

The term "housekeeping" in industry is not to be mistaken for a push broom effort. Housekeeping means much more than that. It is an orderly arrangement of operations, tools, equipment, storage, facilities and supplies. Some of our operations produce dirt, dust and clutter, but these by-products can be controlled. Effort directed toward elimination of clutter, congestion and dirt is a single, direct and profitable approach to the prevention of accidents. Practically any action toward such improvement is quickly apparent and effective. Permanent good housekeeping is a highly successful means of controlling run-of-the-mill accidents and injuries from stumbling, tripping, falling, dropping objects, bumping into objects, being struck by objects, and having various parts of the body caught between objects. For the most part, the origin of all these accidents can be controlled by good housekeeping practices.

Similarly, most industrial fires result from, or are caused to spread by poor housekeeping conditions. The most frequent sources of ignition in industrial fires are: electrical systems, friction, open flames or sparks, spontaneous ignition, electrostatic discharges and smoking. Most electrical and friction fires can be prevented by maintenance procedures. Smoking, of course, is not permitted around combustible material. However, the potential hazards inherent in the fire sources just mentioned cannot be controlled with maximum effectiveness without good housekeeping procedures.

Do your part in maintaining good housekeeping and by so doing keep the plant safe and efficient. Your locker reflects your personal housekeeping attitude. Keep your locker clean, neat, and in order.

NAIL PROJECTION HAZARDS

All nails, regardless of size, on which the points or heads protrude from the nailed material must be completely removed and deposited in the proper disposal containers. Bending over or pounding the nails flat is not considered a satisfactory method of eliminating the hazard of nail projections.

This regulation will apply to nails used in crates, boxes, barrels or any containers including tie braces or partitions and parts or portions of such containers regardless of the material of construction.

This regulation shall also apply to nails used in erecting temporary or permanent construction or dismantling of such construction as platforms, support posts, toe boards, scaffolding, bridging or any other portion of construction work, irrespective of the material of construction.

Strict compliance with the above regulation will eliminate the probability of accidental contact of the feet, hands or any other part of the body with projecting nails.

REMOVAL OF OIL FROM FLOOR

It is not permitted to place rags on the floor to absorb oil. Oil on the floor should be:

1. Absorbed with accepted commercial absorbent material such as Speedi-dri and cleaned up immediately.
2. Mopped up and the floor dried.
3. Wiped up with rags which must be immediately placed in approved oil waste drop-lid cans which are provided for this purpose.

Mops used for removing oil must be kept in areas where excessive heat is not present. This rule must be followed to eliminate the possible fire hazards these mops present.

CHARGING RACK AREA

The charging rack area is to be kept neat. Welding cylinder charging tags and old decals are to be kept off the floor. These tags and decals present a serious slipping hazard, especially when wet, and should be placed in the waste container provided for their disposal. Shipping tag wires should be handled carefully to avoid puncture wounds and cuts.

An important aspect of safety during charging rack operations is to be certain that floors are level in all areas of cylinder storage. Uneven floors can cause cylinders to upset. This is especially hazardous in a cylinder storage area, since a domino effect can result with one falling cylinder striking an adjacent cylinder, etc., until the entire storage pile falls over.

ICICLES - REMOVAL

(a) If heavy icicles in a hazardous location cannot be reached, rope off or otherwise barricade the space beneath them until they have melted.

(b) When using a ladder, place it properly. Use spiked ladder shoes, and secure the ladder with rope.

(c) Use a pole with an offset or hook on the end so you will not be directly under the icicles. Do not overreach.

(d) If you must climb a sloping roof or work from a window to remove icicles; wear a safety belt and life line.

(e) Rope off the area, barricade it, or have someone guard it until the job is done. Work from the ground or other level footing whenever possible.

REMOVAL OF SNOW AND ICE

All plant walkways must be kept free of ice and snow accumulation.

PILING MATERIALS

Poorly piled materials are dangerous. A safe pile has no irregular ends. It cannot topple over on you or fall on others.

(a) Give each pile a firm foundation, and start it right.

(b) Do not pile material too high for safe lifting and handling.

(c) Allow ample room for passageways. Observe clearance rules of aisles, sprinkler heads, and railroad tracks.

(d) Never obstruct the path to fire fighting equipment. Keep fire doors clear.

(e) Whenever materials are of a shape to permit it, cross-tie the tiers so that they support each other.

(f) When there is danger of the pile's being insecure, interlock the tiers with boards or other material.

(g) When piling heavy materials in buildings, learn the safe load limit of that particular floor and observe it.

(h) Block round objects, such as pipe, drums and cylinders so they cannot roll.

FINISH THE JOB

(a) Check over your job, step by step. Make sure it is really done.

(b) Leave no projecting nails, screws, splinters, or sharp edges of metal.

(c) Return tools to their proper places. Leave no tool or other appliance on a machine or other place where it may fall or cause damage when the power is turned on.

(d) Return surplus materials to stock.

(e) Store ladders, scaffolding and other equipment safely in the places provided.

(f) Pick up all debris, waste, rags. Use the containers provided.

FINISH THE JOB (Cont'd.)

(g) Leave no spilled oil, grease, water or other slipping or stumbling hazard.

(h) Before you leave jobs where hazards may exist, put up ropes, guard rails or other blocking, and warning signs.

0	6/21/94	DEVELOPED DRAWING	E.K.W.	P.D.		P.D.
REV. #	DATE	DESCRIPTION OF REVISION	REV. BY	ENG	CHKD BY	APPVD BY
PROJECT MANAGER: P. DIMAKOS			DRAWN BY: M.S. MAIBACH, SR.			

INTERNATIONAL TECHNOLOGY CORPORATION

FIGURE 2

FACILITY LAYOUT WITH AREAS OF CONCERN, SOIL SAMPLING LOCATIONS AND ANALYTICAL RESULTS

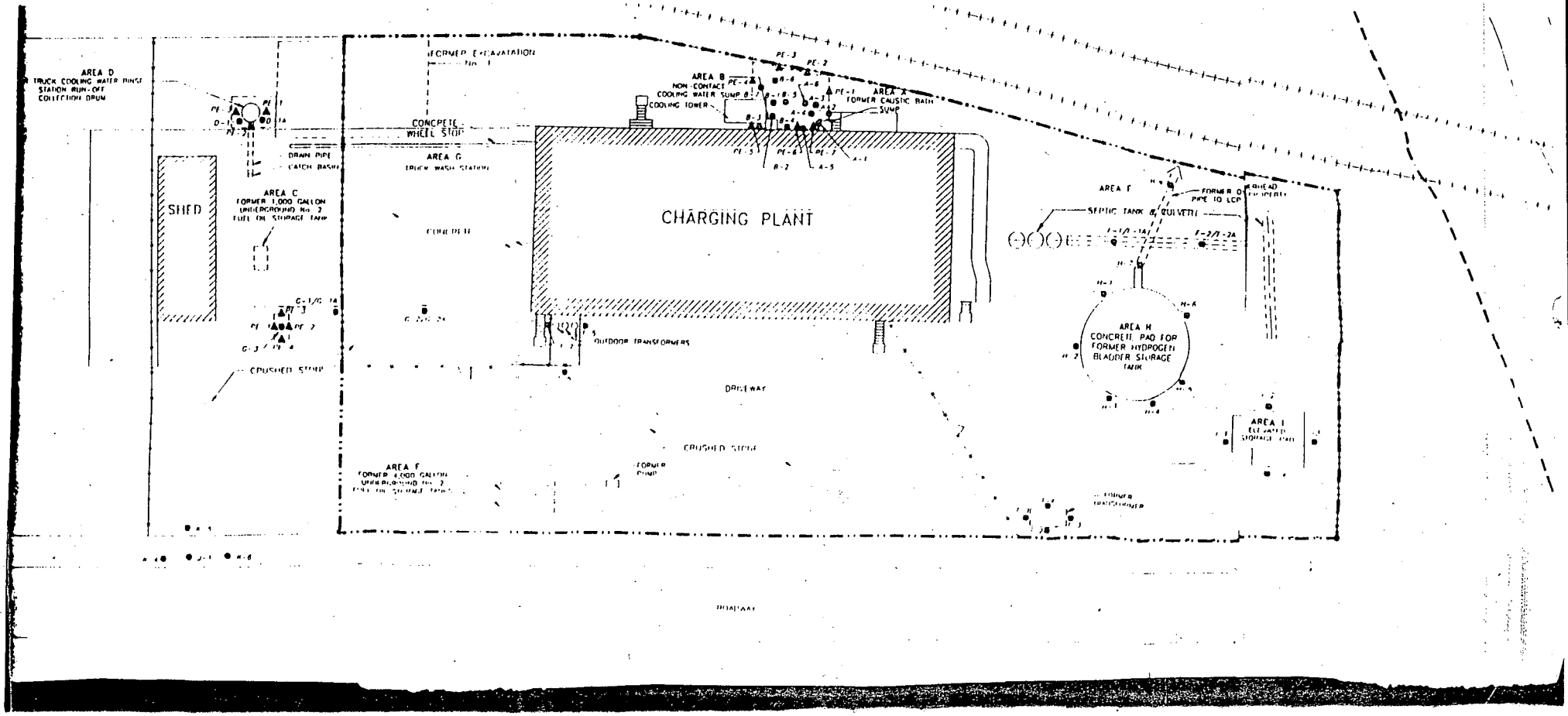
Prepared For:

PRAXAIR, INC.
TONAWANDA, NEW YORK
PROJECT No. 529326
JUNE 1994

LAYER(S)	DATE INITIATED	DRAWING NUMBER
0	9/8/90	529326-E1

0 20 40 60

SCALE OF FEET



Site Location Map

Shaded Area
Demised
Premises

+/- 2.102 Acres

p:\lcp\21405\gis\remedial investigation maps.apr 07/16/02

Figure 5-11
DISTRIBUTION OF COPPER IN DEEP FILL
(2 - 16 feet)
LCP Chemicals, Inc. Superfund Site
Linden, New Jersey

BROWN AND CALDWELL

Copies of Additional Figures/Maps will be forwarded shortly.

Remedial Action Report
Linde Gases of the Mid-Atlantic, Inc. Facility
Linden, New Jersey
ISRA Case No. 90367

Prepared for:

Praxair, Inc.
Tonawanda, New York

Prepared By:

IT Corporation
165 Fieldcrest Avenue
Edison, New Jersey 08837
(908) 225-2000

June 1994

IT Project No. 529326

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1.0 Introduction

The cessation of operations at the former Linde Gases of the Mid-Atlantic, Inc. (Linde) facility, located in Linden, New Jersey, required compliance with the Environmental Cleanup Responsibility Act (ECRA). The Linde operations were terminated in May 1990. ECRA is administered by the New Jersey Department of Environmental Protection and Energy (NJDEPE). The NJDEPE assigned case No. 90367 to this ECRA case.

Since May 1990, Praxair has implemented an ECRA soil and groundwater investigation at this facility property. Specifically, soil sampling and analysis was completed in June 1990 and June 1991. Additionally, "at peril" remedial excavations and soil sampling and analysis were completed in April 1992. Groundwater sampling and analysis was performed in June 1991, July 1991 and April 1992. The results of the soil and groundwater sampling and analysis, prior to July 1991 were provided in two separate *Remedial Investigation Reports* in March 1991 and July 1991. The results of the July 1991 and April 1992 groundwater sampling and analysis and the April 1992 "at peril" remedial excavations were provided in the May 1992 *Remedial Investigation Report.*

At the time of the ECRA filing, Linde was a division of Union Carbide Industrial Gases, Inc. On June 5, 1992 Union Carbide Industrial Gases, Inc., changed its name to Praxair, Inc. Linde, therefore, became a division of Praxair, Inc. On June 30, 1992 Union Carbide Corporation spun-off Praxair, Inc. to its shareholders who are also the ultimate shareholders of Praxair, Inc. (Praxair).

On November 24, 1992, Praxair met with the NJDEPE to discuss future considerations for this case. From this meeting it was mutually concluded that capping of the unpaved areas of the site would provide a cost-effective and environmentally sound remedial option for this case. In February 1993, Praxair submitted the ECRA Cleanup Plan for this case, based upon the conclusions reached with the NJDEPE during the November 1992 NJDEPE meeting. The draft NJDEPE Cleanup Plan approval letter was received from the NJDEPE in September 1993 and responded to with comments in October 1993. Following NJDEPE Cleanup Plan/Remedial Action Workplan approval in April 1994, the remedial capping and related activities were implemented in April 1994.

This remedial action report, prepared for Praxair as per N.J.A.C. 7:26E-6.6, outlines how the capping remedial option was implemented.

2.0 Background

2.1 Environmental Setting and Site Information

The following section presents a profile of the environmental characteristics of the site and general area.

2.1.1 General

The Linde facility was utilized as a hydrogen transfill and repackaging plant. The property is situated in a heavily industrialized area on South Wood Avenue, north of Tremley Point Road in Linden, Union County, New Jersey. Linde leased the property from LCP Chemicals and Plastics, Inc. (LCP).

The property consists of approximately 2.1 acres. An estimated forty percent of the property is occupied by buildings and other impervious structures and the remainder is covered with traprock and gravel. The location of the site is shown on Figure 1, attached at the end of this document.

2.1.2 Site History

Prior to 1957 the property was owned by GAF Corporation but was vacant land. In 1957 the property was leased by Union Carbide Corporation-Linde Division (UCC-Linde). Subsequent to 1957, LCP became property owner and continued this property lease by UCC-Linde. UCC-Linde operated the Linden facility as a hydrogen transfill and repackaging plant. In 1988, operation of the facility was transferred to Linde Gases of the Mid Atlantic Inc., a wholly owned subsidiary of Union Carbide Industrial Gases Inc., and continued to operate as a hydrogen transfill and repackaging plant until the cessation of operations in May 1990.

2.1.3 Geology and Soils

The areas in the vicinity of the site are underlain by Brunswick sandstone and/or shale. Soils are stratified silty clays usually very soft and highly compressible. The top 2 to 5 feet of marsh area consists of an organic layer or decomposed roots from tidal marsh plant growth.

When the property was developed, approximately seven to eight feet of fill material was deposited over the natural marsh and silty clay deposits. It is well documented that various heterogenous materials, including cinder ash/slag, were used as backfill to increase site grade to its existing elevation.

2.1.4 Topography/Drainage

The regional topography is characteristically flat at or near ocean tide level. Drainage is poor due to the high silt and clay content, the flat land surface, and the fluctuations of tide water.

2.1.5 Hydrogeology

Groundwater is relatively shallow, two or four feet below grade, and may be tidally influenced. Shallow groundwater flow direction is generally south to southwest towards the nearby Rahway River which is within 1,500 feet due south of the Praxair site.

2.2 Sampling and Remedial Activities to Date

2.2.1 Former 4,000 Gallon No. Two Fuel Oil Underground Storage Tanks

Two steel 4,000 gallon No. Two fuel oil underground storage tanks (UST) were removed by excavation from the facility property in July 1988. Figure 2, attached at the end of this document, shows the former location of these tanks. After removal, the tanks were cleaned and, from a visual inspection of both tanks, there was no evidence of leaking, holes or cracks. The tanks were dismantled and removed off-site for disposal.

The excavation pit was 36 feet long, 17 feet wide and approximately 6 to 7 feet deep. Fifteen confirmatory post-excavation soil samples were collected and analyzed for total petroleum hydrocarbons (TPHC). Five of the post-excavation samples were also analyzed for priority pollutant base/neutral organics plus fifteen (B/N+15). Results of the TPHC soil sample analyses ranged from not detected to 600 parts per million (ppm). There were no priority pollutant base/neutral organics detected in the soil samples. As a result, the excavation was properly backfilled and the excavated soil was removed for off-site disposal. The post-excavation soil sample analytical results are summarized on Table 1.

To date analytical results of groundwater samples from nearby monitoring wells have indicated that these USTs have not impacted the environment. Tables 2, 3, 4 and 5 summarize the analytical results of the groundwater sampling completed to date for this and all remaining site areas of environmental concern.

2.2.2 Building Interior and Equipment Decontamination

Hydrogen gas, generated by LCP the adjacent facility and property to the north, was delivered to Linde by aboveground - overhead pipeline. The hydrogen gas from LCP was contaminated with mercury due to the LCP process but was purified by Linde prior to containerization. Over time, however, the process of hydrogen gas purification contaminated the main building interior

with mercury. This hydrogen gas transfer and mercury removal process was terminated in 1980, after which cryogenic liquid hydrogen was delivered by trailer to Linde. The delivered hydrogen was stored on-site in an aboveground 18,000 gallon storage tank.

In March 1988, the main building interior and a gas compressor unit were fully decontaminated to remove residual mercury (Hg) from all surfaces.

All surfaces and pertinent equipment were vacuumed utilizing a HEPA vacuum and degreased by scrubbing with a non-hazardous solvent. The degreasing scrub was followed by pressure wash with a water and mercury absorbent solution. Finally all surfaces and pertinent equipment were thoroughly rinsed with water. Decontamination was verified by confirmatory wipe samples analyzed for mercury. The wipe sample analytical results indicated mercury removal was completed properly.

2.2.3 ISRA Investigation

IT Corporation (IT) implemented a Sampling and Analysis Plan (SAP) at the Linde, Linden, New Jersey facility in June, 1990 under ECRA case number 90367. The SAP consisted of a soil sampling and analysis program to initiate the evaluation of the potential areas of environmental concern at the Linde facility. This program was implemented "at peril" prior to SAP approval from the NJDEPE. Conditional NJDEPE SAP approval was received on December 6, 1990. The results of the implemented preapproved SAP were submitted to the NJDEPE in the March, 1991 *Remedial Investigation Report.*

On May 13, 1991, the NJDEPE comments to the *Remedial Investigation Report* were received by Linde. Generally, the NJDEPE comment letter outlined and required additional soil sampling and analysis, at various areas of environmental concern. Also, the NJDEPE comment letter required the implementation of a facility groundwater sampling program.

In July 1991, Linde submitted a second *Remedial Investigation Report* for the additional soil sampling and analysis and results of the groundwater sampling program. On January 24, 1992, Linde received comments to the July 1991 report from the NJDEPE approving proposed actions by Linde and outlining additional requirements.

In May 1992, Linde submitted a third and most recent *Remedial Investigation Report* for additional soil and groundwater sampling and analyses results. In October 1992, Linde received a draft letter from the NJDEPE commenting on the May 1992 *Remedial Investigation Report.*

In February 1993, Linden submitted a *Cleanup Plan,* which recommended a cap of all unpaved surface areas of the site with an impermeable three inch layer of asphalt pavement. In April 1994, Linde received from the NJDEPE, a draft approval letter commenting on the February 1993 *Cleanup Plan.* This draft letter approved proposed actions, by Linde, for the Linden site. The NJDEPE also recommended that all applicable permits be obtained before the proposed action commenced. Only one permit was necessary, *a Soil Erosion and Sediment Control Plan.* The plan was submitted to the Somerset-Union Soil Conservation District in October 1993 and approved on December 6, 1993. Appendix A presents the approval and compliance letters for the *Soil Erosion and Sediment Control Plan,* from the Somerset-Union Soil Conservation District.

The ISRA soil sampling and analysis results to date are summarized on Figure 2. The groundwater sampling and analysis results are summarized on Tables 2, 3, 4 and 5. Each ISRA case area of concern and the related sampling activities are discussed below.

Area A - Abandoned Cylinder Caustic Bath Sump

A sump was previously used for caustic bath liquid generated from exterior paint stripping of gas cylinders. Figure 2 shows the location of the caustic bath sump behind the charging plant.

This area was evaluated by a surficial soil sampling program on the perimeter of the sump. Two samples, A-1 and A-2, were collected at 1.0 to 1.5 feet below grade and analyzed for priority pollutant volatile organics plus fifteen (VO+15), priority pollutant heavy metals (Metals) and total petroleum hydrocarbons (TPHC). Samples A-1 and A-2 were collected on June 12, 1990. Due to the elevated levels of Metals detected in samples A-1 and A-2, nine additional soil samples, at sample locations A-2 through A-6, were collected at 1.0 to 1.5 and 4.0 to 4.5 foot intervals. These samples were collected on June 3 and 4, 1991 and analyzed for Metals only.

Results of the June 1990 and June 1991 soil sampling suggested that the caustic solution, had overflowed into the soil surrounding the sump. As a result, the caustic solution, likely containing dissolved Metals in solution, had apparently contaminated the soil surrounding this sump.

Due to the extent of Metals in the caustic sump area, an "at peril" remedial excavation was undertaken in this area in April 1992. Confirmatory post-excavation soil samples were collected on April 16, 1992 and analyzed for Metals. Analytical results of the post-excavation soil sampling indicated Metals contamination remained in the soil in this area. However, the remedial excavation clearly revealed that this area had been filled with cinder ash/slag material from grade elevation to at least 4.5 feet below grade. Investigation into NJDEPE public files revealed that a Metals contaminated historic fill condition, documented to the turn of the century, existed at

Linde's leasehold property and extended to hundreds of acres of surrounding property. Therefore, the resultant conclusion was that the source of the Metals contamination was the cinder ash/slag fill material and not facility operations. Figure 2 presents all sampling locations and analytical results for this area to date. The capping remedial action was completed for this area of concern.

Area B - Non Contact Cooling Water Sump

A non-contact cooling water sump was utilized to accept non-contact cooling water overflow from the adjacent cooling tower. The non-contact cooling water was circulated between the cooling tower and the compressors. Figure 2 shows the location of the cooling water sump behind the charging plant.

This area was evaluated by a surficial soil sampling program on the perimeter of the sump. Two samples, B-1 and B-2 were collected at 1.0 to 1.5 feet below grade and analyzed for Metals and TPHC. Samples B-1 and B-2 were collected on June 12, 1990. Due to the elevated levels of Metals detected in samples B-1 and B-2, eight additional soil samples, at sample locations B-3 through B-7 were collected at 1.0 to 1.5 and 4.0 to 4.5 foot intervals. These samples were collected on June 4, 1991 and analyzed for Metals only.

Results of the June 1990 and June 1991 soil sampling suggested that the non-contact cooling water, apparently containing Metals in solution, had overflowed and contaminated the soil surrounding this sump.

Due to the extent of Metals in the cooling water sump area, an "at peril" remedial excavation was undertaken in this area in April 1992. Confirmatory post-excavation soil samples were collected on April 16, 1992 and analyzed for Metals. Analytical results of the post-excavation soil sampling indicated Metals contamination remained in the soil in this area. However, the remedial excavation clearly revealed that this area had been filled with cinder ash/slag material from grade elevation to at least 4.5 feet below grade. Investigation into NJDEPE public files revealed that a Metals contaminated historic fill condition, documented to the turn of the century, existed at Linde's leasehold property and extended to hundreds of acres of surrounding property. Therefore, the resultant conclusion was that the source of the Metals contamination was the cinder ash/slag fill material and not facility operations. Figure 2 presents all sampling locations and analytical results for this area to date. The capping remedial action was completed for this area of concern.

Area C - Former 1,000 Gallon No. Two Fuel Oil Underground Storage Tank

A steel 1,000 gallon No. Two fuel oil UST is located near the former garage. Figure 2 shows the location of the tank. The tank was properly decommissioned in place by Linde in 1974 and

filled with sand. This tank and its potential impacts have been addressed as part of the site groundwater investigation. The capping remedial action was completed for this area of concern.

Area D/G - Truck/Cylinder Cooling Water Rinse Station and Runoff Collection Drum

Tube trailers, comprised of long tube-like gas cylinders, were sprayed with cooling water as they were filled with gas. This cooling rinse took place on a concrete pad surface west of the charging plant. The cooling water runoff collected in a catchbasin in the concrete pad and discharged to a nearby drum which was partially below ground level. Figure 2 shows the location of these areas.

This area was evaluated by a surficial soil sampling program. One sample, D-1 was collected adjacent to the runoff collection drum at the 1.0 to 1.5 foot interval and two samples, G-1 and G-2, were collected adjacent to the concrete surface in this area. These samples were collected on June 12, 1990 and analyzed for TPHC and Hg. Additional analytical parameters and soil sampling were required in this area by the NJDEPE, therefore four additional soil samples were collected. The additional soil samples, G-1A, G-2A, G-3 and D-1A, were collected at the 1.0 to 1.5 foot interval on June 3 and 4, 1991. These samples were analyzed for Metals and B/N+15.

Results of the D-1 and D-1A soil sampling indicated that the area surrounding the runoff collection drum was apparently contaminated by Metals. Analytical results of the G-1, G-1A, G-2, G-2A and G-3 soil samples indicated that sample location G-3 was apparently contaminated by base/neutral organics. The remaining Area G soil sampling location analytical results indicated there was no apparent contamination remaining.

Due to the extent of Metals in the runoff collection drum and base/neutral organics in the G-3 sampling location, each area was remediated by "at peril" excavation in April 1992. Confirmatory post-excavation soil samples were collected and analyzed for Metals in the runoff collection drum area, designated as Area D/G. Confirmatory post-excavation soil samples were collected and analyzed for B/N+15 in the remedial excavation at previous soil sample location G-3, designated Area G-3. The confirmatory post-excavation soil samples for both areas were collected on April 17, 1992. The Area D/G post-excavation soil sample analytical results indicated Metals contamination remained in the soil in this area. However, the excavation revealed this area contained the Metals contaminated historic fill material. The resultant conclusion was that the source of Metals contamination was the fill material. The Area G-3 post-excavation soil sample analytical results indicated base/neutral contaminated soil had been removed. Figure 2 presents all sampling locations and analytical results for these areas to date. The capping remedial action was completed for this area of concern.

Area E - Former 4,000 Gallon No. Two Fuel Oil Underground Storage Tanks

Two 4,000 gallon No. two fuel oil USTs were located south of the charging plant. Figure 2 shows the former location of these tanks. Both USTs were excavated, cleaned, dismantled and disposed of in July 1988. This area is discussed in more detail in Section 2.2.1 of this report and in greater detail in the Report on Excavation of Underground Fuel Oil Storage Tanks by IT in August 1988. This IT report was included in the May 1990 Site Evaluation Submission for this ISRA case, No. 90367. The capping remedial action was completed for this area of concern.

Area F - Septic Tank and Leach Field

A septic tank and leach field are located east of the charging plant. Figure 2 shows the location of the septic tank and leach field. The septic tank was used for sanitary wastes only. One sludge sample, F-sludge, and one liquid sample, F-liquid, were collected in June 1990 from the septic tank and analyzed for Hg and B/N+15. Results of the sludge and liquid sample analyses indicated 80 and 0.0003 parts per million (ppm) of Hg were detected in the sludge sample and liquid samples, respectively. Results of the sludge and liquid B/N+15 analyses indicated 20 ppm and 0.058 ppm total base/neutral organic compounds were detected in the sludge and liquid samples, respectively.

Additionally, two soil samples, F-1 and F-2, were collected within the septic tank leach field at the 3.5 to 4.0 foot interval below grade. Each sample was collected in June 1990 and analyzed for B/N+15 and Hg. Results of the B/N +15 analyses of samples F-1 and F-2 indicated there were no base/neutral organics detected in the septic tank leach field. The Hg analyses results indicated there was no Hg detected in soil sample F-1 and 2.6 to 4.3 ppm of Hg were detected in soil sample F-2.

Soil sample locations F-1 and F-2 were resampled in August 1991 for analysis of the remaining priority pollutant Metals and TPHC. These samples were designated as F-1A and F-2A. The analytical results of the resampling indicated Metals were present in the soil in the area of the septic tank leach field. The Metals were attributed to the contaminated historic fill material observed throughout the property. Figure 2 presents all sampling locations and analytical results for this area, to date. The capping remedial action was completed for this area of concern.

Area H - Former Hydrogen Bladder Storage Tank Location

A circular elevated concrete pad, located east of the charging plant, was used as a base for a hydrogen bladder storage tank until the tank was removed. The hydrogen gas, entering the bladder tank via overhead piping from the adjacent LCP facility was known to contain Hg. Figure 2 shows the location of the circular tank pad.

Six soil samples, H-1 through H-6, were collected at the perimeter of the circular pad and two additional samples, H-7 and H-8, were collected beneath the overhead piping. All samples were collected at the 1 to 1.5 foot interval below grade and analyzed for Hg.

Results of Hg analysis of samples H-1 through H-8 ranged from 0.28 to 5.2 ppm indicating there was no significant impact from the tank. Figure 2 presents all sampling locations and analytical results for this area. The capping remedial action was completed for this area of concern.

Area I - Elevated Storage Pad

An elevated storage pad, located east of the charging plant, was previously used to store cylinders. Figure 2 shows the location of the storage pad. The pad is 4 to 6 feet above grade and is no longer in use. Four soil samples, I-1 through I-4, were collected adjacent to the pad. One sample was collected from each side of the pad at the 1 to 1.5 foot interval below grade and analyzed for TPHC and Hg.

Results of the TPHC analysis for all samples ranged from not detected to 96 ppm. Results of the Hg analysis show samples I-1 through I-4 ranging from 0.45 ppm to 2 ppm. These results indicate there was no significant impact from the cylinders stored on the pad. Figure 2 presents all sampling locations and analytical results for this area. The capping remedial action was completed for this area of concern.

Area J - Background

To identify the background condition of the facility, soil samples were collected in an area assumed to be unaffected by facility operations. Two soil samples at location J-1 were collected at the 1 to 1.5 foot and 3.5 to 4 foot intervals below grade in the southwest corner of the property (See Figure 2). These samples were analyzed for TPHC, VO+15, B/N+15 and Metals.

Results of TPHC analysis of sample J-1 at the 1 to 1.5 foot interval and the 3.5 to 4 foot interval were not detected and 68 ppm, respectively. Results of B/N+15 analysis of sample J-1 at the 1 to 1.5 foot interval were not detected for all target compounds. Results of B/N+15 analysis of sample J-1 at the 3.5 to 4 foot interval show 0.46 ppm of bis (2-ethylhexyl) phthalate, 0.48 ppm of chrysene and 0.81 ppm of pyrene. All other priority pollutant base/neutral organic compounds were not detected. Results of VO+15 analysis for sample J-1 at the 1 to 1.5 foot interval and the 3.5 to 4 foot interval were 0.007 ppm and 0.016 ppm methylene chloride, respectively. All other priority pollutant volatile organics, at both sampling depths, were not detected.

Results of Metals analysis for sample J-1 at 1 to 1.5 feet below grade ranged from not detected to 340 ppm of zinc. Results of Metals analysis for sample J-1 at 3.5 to 4 feet below grade ranged from not detected to 2800 ppm of lead.

Additional soil sampling in background areas of the facility was completed. Three soil samples, K-4 through K-6 were collected surrounding previous sample location J-1. Three additional soil samples, K-1 through K-3, were collected in another background location of the property in an area assumed to be independent of facility operations. All six samples were collected at the 3.5 to 4.0 foot interval on June 3 and 4, 1991 and analyzed for Metals. Results of the Metals analyses of these samples indicated Metals were inherent in the fill material, although concentrations of Metals were not consistent throughout all locations. With the exception of background locations K-1 through K-3, remedial actions were completed for this area of concern as this area was included in the asphalt cap.

Groundwater

A shallow groundwater investigation has been completed at this site utilizing eight groundwater monitoring wells. Initially, six wells were installed in June 1991 and two additional wells were installed in April 1992.

Groundwater samples were collected on June 27, 1991 and were analyzed for VO+15, B/N+15, TPHC and Metals. A second round of groundwater samples was collected on July 31, 1991 and analyzed for VO+15, B/N+15, TPHC and Metals. These first two sampling rounds utilized the initial six wells. A third round of groundwater samples was collected on April 30, 1992 utilizing all eight wells.

In the third groundwater sampling round, the original six wells MW-1 through MW-6, were analyzed for Metals only, with the exception of MW-2, analyzed for VO+15 also. The two additional wells, MW-7 and MW-8 were sampled on December 2, 1992 and analyzed for VO+15 only.

Groundwater level measurements from all groundwater sampling events indicate groundwater flow direction is south to southwest, toward the Rahway River.

Results of the shallow groundwater investigation at the facility property indicated facility operations have not impacted shallow groundwater. Any elevated levels of contaminants in the shallow groundwater of this area are documented in NJDEPE files as the result of off-site sources. No remediation was conducted for this area of concern.

3.0 Findings/Remedial Actions

From an evaluation of sampling analytical results and visual observations from site sampling and excavation activities, it is apparent that Metals are the only contaminants posing any significant potential threat to human health and the environment at this site. Furthermore, it is apparent that Metals contamination at this site is inherent in the cinder slag material utilized as backfill for elevating site grade and general site development. This backfilling is well documented in NJDEPE files and predates Linde's tenancy at this site. This Remedial Action - asphalt capping was implemented at this site to achieve protection of human health and the environment from heavy metals (Metals) contamination in site fill material. Capping the surface area of the site with an impermeable asphalt pavement layer was the most cost-effective and technically viable Remediation Action. In conjunction with the asphalt capping, the NJDEPE requires a Department Approved Use Restriction for the site. At this time, final execution of a Declaration of Environmental Restrictions (DER) with property owner LCP is pending. An executed DER will be forwarded to the NJDEPE immediately upon receipt from LCP.

3.1 Findings/Excavation Backfilling, Grading and Surface Pavement Cap

Backfilling for the remedial excavations implemented in Areas A, B and D was completed in December 1993. The backfill material was certified clean soil from a virgin soil pit. Appendix B contains a copy of the certification of the backfill virgin soil. Appendix C contains copies of the excavated soil waste disposal manifests for soil removed from these areas for proper off-site disposal.

To preclude ingestion of the Metals in the fill material, from either direct contact or by inhalation of dusts, an impermeable three inch layer of asphalt pavement was placed on all unpaved surface areas of the site. This procedure commenced on April 25, 1994, with grading of all surface areas of the site. Contaminant - free fill was deposited to facilitate proper grading of the site. This fill material consists of NJDEPE approved recycled concrete and/or brick which meets NJDEPE Division of Solid Waste requirements. The concrete or brick received and processed as a raw material to produce the fill is certified clean before receipt by the processing facility. See Appendix D for raw material specification requirements of the clean fill grading material. Grading was necessary to produce proper drainage of surface water away from the site. A total of 511 tons of the recycled clean fill material were spread and graded at the site. The fill was placed in no more than six inch layers and compacted by a vibratory roller. After final grading and compaction, a three inch layer of asphalt pavement was placed over all unpaved surfaces. This procedure was completed on May 23, 1994. During the grading and paving, a representative

of the Somerset-Union Soil Conservation District visited the site weekly to assure the specifications of the approved *Soil Erosion and Sediment Control Plan* was implemented. Figure 3 shows those areas of the facility property where the remedial asphalt cap was applied.

3.2 Well Abandonment

The eight shallow groundwater monitoring wells onsite were sealed, according to N.J.A.C. 7:9-9, by a New Jersey licensed well sealer on October 13, 1993. The well abandonment reports were submitted to the Bureau of Water Supply, Planning and Management. Appendix E contains copies of the well abandonment reports.

3.3 Project Costs

The total cost for implementing the Cleanup/Remedial Action, including labor, equipment and materials was $69,400.

TABLE 1

SUMMARY OF ANALYTICAL RESULTS
OF POSTEXCAVATION SOIL SAMPLING AT
UNION CARBIDE CORPORATION
LINDEN, NEW JERSEY
JULY 7, 1988

Sample Location	SW1	SW2	SW3	SW4	SW5	SW6	B1	B2	B3	B4	B5	B6	B7	B8	B9	FB	IN
Sample Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	-	
Sample Date	7/7/88	7/7/88	7/7/88	7/7/88	7/7/88	7/7/88	7/7/88	7/7/88	7/7/88	7/7/88	7/7/88	7/7/88	7/7/88	7/7/88	7/7/88	7/7/88	7/7/
Parameter (ppm)																	
Total Petroleum Hydrocarbons	600	320	350	90	160	<24	41	240	180	340	120	70	200	170	120	[illegible]	N
Base/Neutral Compounds +15	ND	NA	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	NA	ND	ND	N/
Tentatively Identified Compounds (TIC)	57.5	NA	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	NA	ND	[illegible]	N
Volatile Organic Compounds +15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		P

ND = Non-detectable
NA = Not Analyzed

ENG/KD119-rpt

TABLE - 2

GROUNDWATER SAMPLING OF JUNE 1991
ANALYTICAL RESULTS SUMMARY

LINDE GASES OF THE MID-ATLANTIC, INC.
LINDEN, NEW JERSEY

SAMPLE POINT	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	FIELD BLANK	TRAVEL BLANK
SAMPLE DATE	6/27/91	6/27/91	6/27/91	6/27/91	6/27/91	6/27/91	6/27/91	6/27/91
PRIORITY POLLUTANT METALS (ppm)								
Antimony	ND	ND	0.024	0.10	ND	ND	ND	NA
Arsenic	0.42	0.42	0.59	0.54	0.069	0.016	ND	NA
Berylium	ND	ND	ND	ND	ND	ND	ND	NA
Cadmium	ND	ND	ND	0.008	ND	ND	ND	NA
Chromium	0.018	0.017	0.016	0.15	0.013	ND	ND	NA
Copper	ND	ND	0.42	5.9	ND	ND	ND	NA
Lead	0.027	0.022	0.25	4.8	0.040	0.046	ND	NA
Mercury	0.010	0.001	0.004	0.032	0.003	0.0005	ND	NA
Nickel	ND	ND	0.047	0.17	ND	ND	ND	NA
Selenium	ND	ND	ND	0.006	ND	ND	ND	NA
Silver	ND	ND	ND	ND	ND	ND	ND	NA
Thallium	ND	ND	ND	ND	ND	ND	ND	NA
Zinc	0.021	ND	0.95	6.7	0.031	0.024	ND	NA
PIORITY POLLUTANT VOLATILE ORGANICS (ppb)								
Acrolein	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	32	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	18	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorobromomethane	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL PRIORITY POLLUTANT VOLATILE ORGANICS (ppb)	ND	50	ND	ND	ND	ND	ND	ND
TOTAL NON-PRIORITY POLLUTANT VOLATILE ORGANICS (ppb)	103	79	ND	ND	120	6	24	ND

TABLE – 2

GROUNDWATER SAMPLING OF JUNE 1991
ANALYTICAL RESULTS SUMMARY

LINDE GASES OF THE MID–ATLANTIC, INC.
LINDEN, NEW JERSEY

SAMPLE POINT	MW–1	MW–2	MW–3	MW–4	MW–5	MW–6	FIELD BLANK	TRAVEL BLANK
SAMPLE DATE	6/27/91	6/27/91	6/27/91	6/27/91	6/27/91	6/27/91	6/27/91	6/27/91
PIORITY POLLUTANT BASE NEUTRAL ORGANICS (ppb)								
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	NA
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	NA
Anthracene	ND	ND	ND	ND	ND	ND	ND	NA
Benzidine	ND	ND	ND	ND	ND	ND	ND	NA
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	ND	NA
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	ND	NA
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	ND	NA
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	ND	NA
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	ND	NA
Bis(2–Chloroethyl)ether	ND	ND	ND	ND	ND	ND	ND	NA
Bis(2–Chloroethoxy)methane	ND	ND	ND	ND	ND	ND	ND	NA
Bis(2–Ethylhexyl)phthalate	ND	ND	ND	13	ND	ND	ND	NA
Bis(2–Chloroisopropyl)ether	ND	ND	ND	ND	ND	ND	ND	NA
4–Bromophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	NA
Butyl Benzyl Phthalate	ND	ND	ND	ND	ND	ND	ND	NA
2–Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	NA
4–Chlorophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	NA
Chrysene	ND	ND	ND	ND	ND	ND	ND	NA
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	NA
Di–n–butylphthalate	ND	ND	ND	ND	ND	ND	ND	NA
1,2–Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	NA
1,3–Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	NA
1,4–Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	NA
3,3'–Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	NA
Diethylphthalate	ND	ND	ND	ND	ND	ND	ND	NA
Dimethylphthalate	ND	ND	ND	ND	ND	ND	ND	NA
2,4–Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	NA
2,6–Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	NA
Di–n–Octylphthalate	ND	ND	ND	ND	ND	ND	ND	NA
1,2–Diphenylhydrazine	ND	ND	ND	ND	ND	ND	ND	NA
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	NA
Fluorene	ND	ND	ND	ND	ND	ND	ND	NA
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	NA
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	NA
Hexachloroethane	ND	ND	ND	ND	ND	ND	ND	NA
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	ND	ND	NA
Indeno(1,2,3–cd)pyrene	ND	ND	ND	ND	ND	ND	ND	NA
Isophorone	ND	ND	ND	ND	ND	ND	ND	NA
Naphthalene	ND	ND	ND	ND	ND	ND	ND	NA
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	NA
N–Nitroso–dimethylamine	ND	ND	ND	ND	ND	ND	ND	NA
N–Nitrosodipropylamine	ND	ND	ND	ND	ND	ND	ND	NA
N–Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	ND	NA
Phenanthrene	ND	ND	ND	ND	ND	ND	ND	NA
Pyrene	ND	ND	ND	ND	ND	ND	ND	NA
1,2,4–Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	NA
TOTAL PRIORITY POLLUTANT BASE NEUTRAL ORGANICS (ppb)	ND	ND	ND	13	ND	ND	ND	NA
TOTAL NON–PRIORITY POLLUTANT BASE NEUTRAL ORGANICS (ppb)	292	490	36	24	8	91	29	NA
TOTAL PETROLEUM HYDROCARBONS (ppm)	ND	ND	ND	ND	ND	ND	ND	NA

1. "NA" signifies not analyzed.
2. "ND" signifies not detected.
3. Analytical methodology as follows:
   VO+15 – EPA Method 624
   B/N+15 – EPA Method 625
   TPH – Std. Methods 503B,C,&E

TABLE – 3

GROUNDWATER SAMPLING OF JULY 1991
ANALYTICAL RESULTS SUMMARY

LINDE GASES OF THE MID-ATLANTIC, INC.
LINDEN, NEW JERSEY

SAMPLE POINT	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	SUMP SAMPLE	FIELD BLANK	TR BL
SAMPLE DATE	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31
PRIORITY POLLUTANT METALS (ppm)									
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	NA
Arsenic	0.14	0.11	0.027	0.052	0.05	0.15	ND	ND	NA
Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	NA
Cadmium	ND	ND	ND	ND	0.005	ND	ND	ND	NA
Chromium	ND	ND	ND	ND	ND	ND	ND	ND	NA
Copper	ND	ND	1.3	0.22	0.037	ND	ND	ND	NA
Lead	ND	ND	ND	ND	ND	ND	ND	ND	NA
Mercury	ND	0.0002	ND	0.0009	0.0005	ND	0.002	ND	NA
Nickel	ND	ND	0.24	0.076	ND	ND	ND	ND	NA
Selenium	ND	ND	ND	0.006	ND	ND	ND	ND	NA
Silver	ND	ND	ND	ND	ND	ND	ND	ND	NA
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	NA
Zinc	ND	ND	4.6	1.2	0.022	0.029	0.19	ND	NA
PIORITY POLLUTANT VOLATILE ORGANICS (ppb)									
Acrolein	ND	ND	ND	ND	ND	ND	NA	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	NA	ND	ND
Benzene	ND	29	ND	ND	ND	ND	NA	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	NA	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	NA	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	NA	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	NA	ND	ND
Chlorodibromomethane	ND	ND	ND	ND	ND	ND	NA	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	NA	ND	ND
2-chloroethylvinyl ether	ND	ND	ND	ND	ND	ND	NA	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	NA	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND	NA	ND	ND
Dichlorobromomethane	ND	ND	ND	ND	ND	ND	NA	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	NA	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	NA	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	NA	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	NA	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	NA	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	NA	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	NA	ND	ND
Ethyl benzene	ND	ND	ND	ND	ND	ND	NA	ND	ND
Methylene Chloride	ND	ND	ND	ND	ND	ND	NA	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	NA	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	NA	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	NA	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	NA	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	NA	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	NA	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	NA	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	NA	ND	ND
Total Xylenes	ND	ND	ND	ND	ND	ND	NA	ND	ND
TOTAL PRIORITY POLLUTANT VOLATILE ORGANICS (ppb)	ND	29	ND	ND	ND	ND	NA	ND	ND
TOTAL NON-PRIORITY POLLUTANT VOLATILE ORGANICS (ppb)	31	61	ND	34	8	24	NA	ND	ND

TABLE – 3

GROUNDWATER SAMPLING OF JULY 1991
ANALYTICAL RESULTS SUMMARY

LINDE GASES OF THE MID–ATLANTIC, INC.
LINDEN, NEW JERSEY

SAMPLE POINT	MW–1	MW–2	MW–3	MW–4	MW–5	MW–6	SUMP SAMPLE	FIELD BLANK	TRAVEL BLANK
SAMPLE DATE	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91
PIORITY POLLUTANT BASE NEUTRAL ORGANICS (ppb)									
Acenaphthene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Acenaphthylene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Anthracene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Benzidine	ND	ND	ND	ND	ND	ND	NA	ND	NA
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Bis(2–Chloroethyl)ether	ND	ND	ND	ND	ND	ND	NA	ND	NA
Bis(2–Chloroethoxy)methane	ND	ND	ND	ND	ND	ND	NA	ND	NA
Bis(2–Ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	NA	ND	NA
Bis(2–Chloroisopropyl)ether	ND	ND	ND	ND	ND	ND	NA	ND	NA
4–Bromophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	NA	ND	NA
Butyl Benzyl Phthalate	ND	ND	ND	ND	ND	ND	NA	ND	NA
2–Chloronaphthalene	ND	ND	ND	ND	ND	ND	NA	ND	NA
4–Chlorophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	NA	ND	NA
Chrysene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Di–n–butylphthalate	ND	ND	ND	ND	ND	ND	NA	ND	NA
1,2–Dichlorobenzene	ND	ND	ND	ND	ND	ND	NA	ND	NA
1,3–Dichlorobenzene	ND	ND	ND	ND	ND	ND	NA	ND	NA
1,4–Dichlorobenzene	ND	ND	ND	ND	ND	ND	NA	ND	NA
3,3'–Dichlorobenzidine	ND	ND	ND	ND	ND	ND	NA	ND	NA
Diethylphthalate	ND	ND	ND	ND	ND	ND	NA	ND	NA
Dimethylphthalate	ND	ND	ND	ND	ND	ND	NA	ND	NA
2,4–Dinitrotoluene	ND	ND	ND	ND	ND	ND	NA	ND	NA
2,6–Dinitrotoluene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Di–n–Octylphthalate	ND	ND	ND	ND	ND	ND	NA	ND	NA
1,2–Diphenylhydrazine	ND	ND	ND	ND	ND	ND	NA	ND	NA
Fluoranthene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Fluorene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Hexachloroethane	ND	ND	ND	ND	ND	ND	NA	ND	NA
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Indeno(1,2,3–cd)pyrene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Isophorone	ND	ND	ND	ND	ND	ND	NA	ND	NA
Naphthalene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Nitrobenzene	ND	ND	ND	ND	ND	ND	NA	ND	NA
N–Nitroso–dimethylamine	ND	ND	ND	ND	ND	ND	NA	ND	NA
N–Nitrosodipropylamine	ND	ND	ND	ND	ND	ND	NA	ND	NA
N–Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	NA	ND	NA
Phenanthrene	ND	ND	ND	ND	ND	ND	NA	ND	NA
Pyrene	ND	ND	ND	ND	ND	ND	NA	ND	NA
1,2,4–Trichlorobenzene	ND	ND	ND	ND	ND	ND	NA	ND	NA
TOTAL PRIORITY POLLUTANT BASE NEUTRAL ORGANICS (ppb)	ND	ND	ND	ND	ND	ND	NA	ND	NA
TOTAL NON–PRIORITY POLLUTANT BASE NEUTRAL ORGANICS (ppb)	146	213	ND	16	529	24	NA	ND	NA
TOTAL PETROLEUM HYDROCARBONS (ppm	ND	ND	ND	ND	ND	ND	1.2	ND	NA

1. "NA" signifies not analyzed.
2. "ND" signifies not detected.
3. Analytical methodology as follows:
   - VO+15 – EPA Method 624
   - B/N+15 – EPA Method 625
   - TPH – Std. Methods 503B,C,&E

TABLE 4

GROUNDWATER SAMPLING OF APRIL 1992
ANALYTICAL RESULTS SUMMARY

LINDE GASES OF THE MID-ATLANTIC, INC.
LINDEN, NEW JERSEY

SAMPLE POINT	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	TRAVEL BLANK	B.
SAMPLE DATE	4/30/92	4/30/92	4/30/92	4/30/92	4/30/92	4/30/92	4/30/92	4/30/92	4/30/92	4/
PRIORITY POLLUTANT METALS (ppm)										
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Arsenic	0.13	0.07	0.11	0.130	0.068	0.05	0.04	0.026	NA	ND
Berylium	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Chromium	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Copper	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Lead	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Nickel	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Zinc	ND	ND	ND	1.5	ND	ND	ND	ND	NA	ND
PIORITY POLLUTANT VOLATILE ORGANICS (ppb)										
Acrolein	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Acrylonitrile	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Benzene	NA	28	NA	NA	NA	NA	43	ND	ND	ND
Bromoform	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Bromomethane	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Carbon tetrachloride	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Chlorobenzene	NA	17	NA	NA	NA	NA	17	6	ND	ND
Chlorodibromomethane	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Chloroethane	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
2-chloroethylvinyl ether	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Chloroform	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Chloromethane	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Dichlorobromomethane	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
1,1-Dichloroethane	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
1,2-Dichloroethane	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
1,1-Dichloroethene	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
trans-1,2-Dichloroethene	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
1,2-Dichloropropane	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
cis-1,3-Dichloropropene	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
trans-1,3-Dichloropropene	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Ethyl benzene	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Methylene Chloride	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Tetrachloroethene	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Toluene	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
1,1,1-Trichloroethane	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
1,1,2-Trichloroethane	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Trichloroethene	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Trichlorofluoromethane	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Vinyl chloride	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
Total Xylenes	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND
TOTAL PRIORITY POLLUTANT VOLATILE ORGANICS (ppb)	NA	45	NA	NA	NA	NA	60	6	ND	ND
TOTAL NON-PRIORITY POLLUTANT VOLATILE ORGANICS (ppb)	NA	49	NA	NA	NA	NA	64	31	ND	ND

TABLE 4

GROUNDWATER SAMPLING OF APRIL 1992
ANALYTICAL RESULTS SUMMARY

LINDE GASES OF THE MID–ATLANTIC, INC.
LINDEN, NEW JERSEY

SAMPLE POINT	MW–1	MW–2	MW–3	MW–4	MW–5	MW–6	MW–7	MW–8	TRAVEL BLANK	FIEL BLAN
SAMPLE DATE	4/30/92	4/30/92	4/30/92	4/30/92	4/30/92	4/30/92	4/30/92	4/30/92	4/30/92	4/30/9
PIORITY POLLUTANT BASE NEUTRAL ORGANICS (ppb)										
Acenaphthene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Acenaphthylene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Anthracene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Benzidine	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Bis(2–Chloroethyl)ether	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Bis(2–Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Bis(2–Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Bis(2–Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
4–Bromophenyl Phenyl Ether	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Butyl Benzyl Phthalate	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
2–Chloronaphthalene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
4–Chlorophenyl Phenyl Ether	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Chrysene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Di–n–butylphthalate	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
1,2–Dichlorobenzene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
1,3–Dichlorobenzene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
1,4–Dichlorobenzene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
3,3'–Dichlorobenzidine	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Diethylphthalate	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Dimethylphthalate	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
2,4–Dinitrotoluene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
2,6–Dinitrotoluene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Di–n–Octylphthalate	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
1,2–Diphenylhydrazine	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Fluoranthene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Fluorene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Hexachloroethane	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Indeno(1,2,3–cd)pyrene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Isophorone	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Naphthalene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Nitrobenzene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
N–Nitroso–dimethylamine	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
N–Nitrosodipropylamine	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
N–Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Phenanthrene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
Pyrene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
1,2,4–Trichlorobenzene	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
TOTAL PRIORITY POLLUTANT BASE NEUTRAL ORGANICS (ppb)	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND
TOTAL NON–PRIORITY POLLUTANT BASE NEUTRAL ORGANICS (ppb)	NA	NA	NA	NA	NA	NA	334	190	NA	55
TOTAL PETROLEUM HYDROCARBONS (ppm)	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND

1. "NA" signifies not analyzed.
2. "ND" signifies not detected.
3. Analytical methodology as follows:
   VO+15 – EPA Method 624
   B/N+15 – EPA Method 625
   TPH – Std. Methods 503 B,C,&E

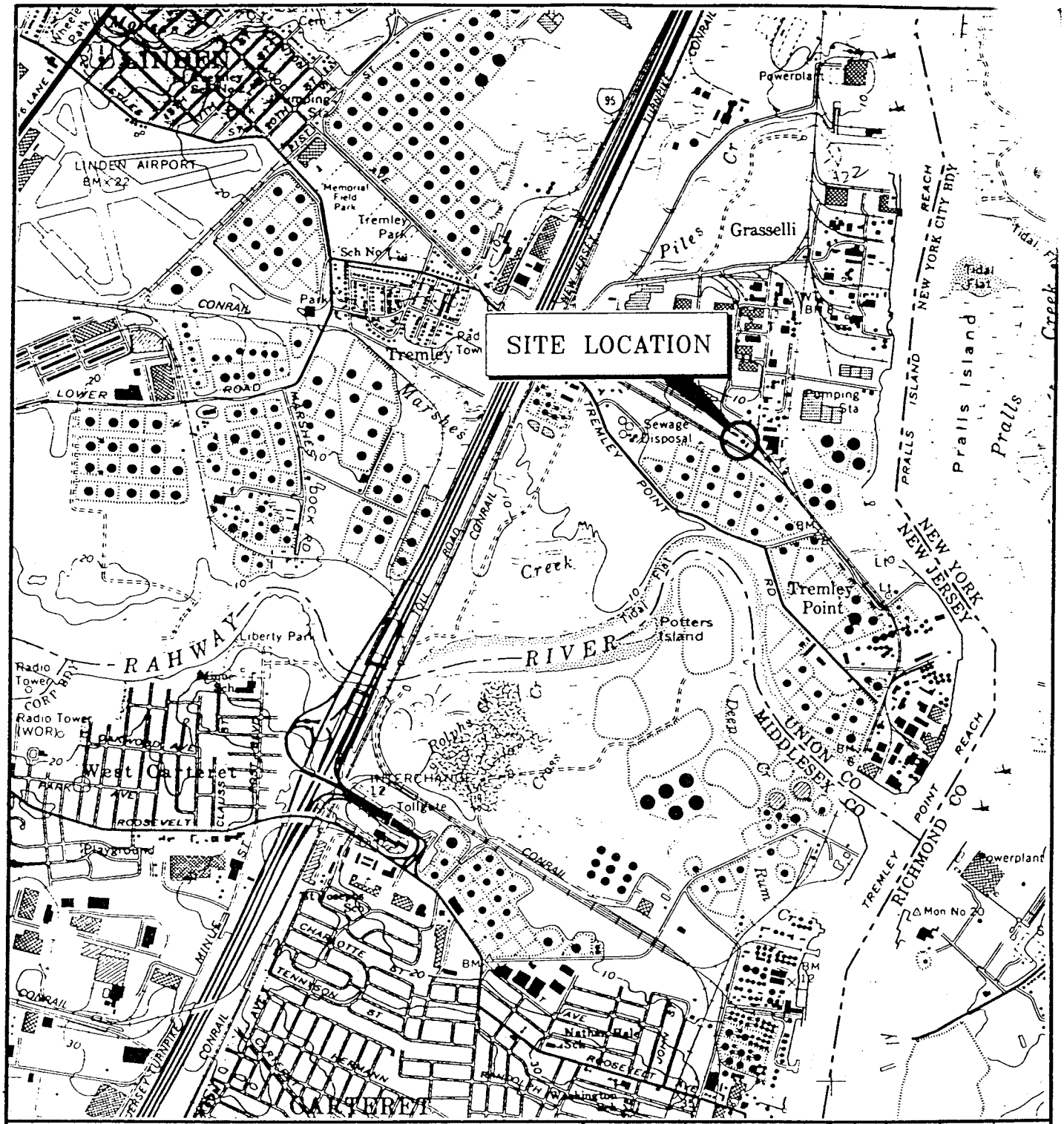
TABLE 5

GROUNDWATER SAMPLING OF DECEMBER 1992
ANALYTICAL RESULTS SUMMARY

LINDE GASES OF THE MID–ATLANTIC, INC.
LINDEN, NEW JERSEY

SAMPLE POINT	MW–7	MW–8	TRAVEL BLANK	FIELD BLANK
SAMPLE DATE	12/2/92	12/2/92	12/2/92	12/2/92
PIORITY POLLUTANT VOLATILE ORGANICS (ppb)				
Acrolein	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND
Benzene	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND
Chlorobenzene	20	9	ND	ND
Chlorodibromomethane	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND
2–chloroethylvinyl ether	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND
Dichlorobromomethane	ND	ND	ND	ND
1,1–Dichloroethane	ND	ND	ND	ND
1,2–Dichloroethane	ND	ND	ND	ND
1,1–Dichloroethene	ND	ND	ND	ND
trans–1,2–Dichloroethene	ND	ND	ND	ND
1,2–Dichloropropane	ND	ND	ND	ND
cis–1,3–Dichloropropene	ND	ND	ND	ND
trans–1,3–Dichloropropene	ND	ND	ND	ND
Ethyl benzene	ND	ND	ND	ND
Methylene Chloride	ND	ND	ND	ND
1,1,2,2–Tetrachloroethane	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND
Toluene	ND	ND	ND	ND
1,1,1–Trichloroethane	ND	ND	ND	ND
1,1,2–Trichloroethane	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND
TOTAL PRIORITY POLLUTANT VOLATILE ORGANICS (ppb)	20	9	ND	ND
TOTAL NON–PRIORITY POLLUTANT VOLATILE ORGANICS (ppb)	87	50	ND	ND

1. "ND" signifies not detected.
2. Analytical methodology:
   VO+15 – EPA Method 624



SOURCE: USGS 7.5 MINUTE SERIES TOPOGRAPHIC MAP, ARTHUR KILL, N.Y.- N.J. QUADRANGLE 1966 PHOTOREVISED 1981

NOTE: CONTOUR INTERVAL – 20 FEET
SITE LONGITUDE – 74° 12' 48"
SITE LATITUDE – 40° 36' 30"

1000 0 1000 2000
SCALE OF FEET

REV. NO.	DATE	DESCRIPTION OF REVISION	REV. BY	ENG	CHKD BY	APPVD BY
PROJECT MANAGER: P. DIMAKOS		DRAWN BY: E.W.			DATE: 6/7/94	

INTERNATIONAL TECHNOLOGY CORPORATION

FIGURE 1
USGS SITE LOCATION MAP
LINDE FACILITY

Prepared For:

PRAXAIR, INC.
TONAWANDA, NEW YORK
JUNE 1994

PROJECT NO.	FILE NO.	CHKD.	DRAWING NUMBER	REV. NO.
529326	A1	ENG. P.D. APPVD. P.D.	529326-A1	

529326A1 06/21/94 3:01pm T. M.

Trace Oxygen Getters (TOGs) are high-pressure (3500 psig) vessels containing a molecular sieve which adsorbs traces of oxygen from nitrogen, argon, and helium. TOGs are used to provide gas of required purity for filling cylinders with products of certain purity grades. The TOG system includes a filter to prevent contamination of product with sieve material. When the sieve material becomes saturated with oxygen, the "spent" TOG is removed, replaced, and shipped to East Chicago for reactivation.

INSTALLING THE UNIT

Unpacking and Inspection

1. Unpack the TOG, saving the outer crate or box and the steel shipping container for later reshipment.

NOTE: The steel shipping container is expensive. If it is damaged or if the top is missing, file a freight damage claim.

2. Inspect the TOG as follows:

   a. Check that the unions joining the TOG to the valves at each end are tight.

CAUTION: Never remove the valves from the TOG. If the molecular sieve material is exposed to the atmosphere it will become rapidly spent.

   b. Attach the valve handwheels if they have been removed for shipping.

   c. Check to ensure that both valves are closed.

   d. Crack the valve at the screen end of the TOG. Nitrogen should escape, indicating that the TOG has kept its seal during shipment.

   e. Close the valve.

NOTE: To maintain activation, TOGs are shipped containing nitrogen under a slightly positive (less than 25 psig) pressure. The pressure is kept below 25 psig to comply with DOT regulations.

Installation Procedure

1. Hoist the TOG into its vertical position, insuring that the screen end is at the bottom.

2. Mate the TOG inlet and outlet valves to your local piping. Use a new O-ring in each union. (If you have a damaged union, contact the Linde East Chicago location.)

3. Purge the inlet connection.

4. Charge the TOG to 2000 psig.

5. Inspect the valves and unions for leaks.

6. If problems occur, such as loosened valves or lack of positive pressure, contact East Chicago.

FILTER SYSTEM

Rapid gas flow, fluidization of the TOG bed, or TOG material breaking through the protective screen may cause contamination in downstream piping and cylinders. To prevent contamination, a high-pressure filter MUST be installed in the discharge piping of all TOG systems as close to the outlet valve as possible.

Use the filter system specified below:

- Balston High-Pressure Filter Type 37/12 with 1/2" NPT Inlet and Outlet Ports.
- Balston Filter Support Core—SS-100-12.
- Balston Micro Fiber Filter Tube—100-12 DX.
- Fittings to connect filter system to existing TOG outlet piping.

NOTE: This filter system is rated to 4000 psig with 0.1 micron filtration capacity and flow rate of 550 scfm at a pressure drop of 2 psig.

Order filters and parts from Middlesex Service Center, Middlesex, NJ. See Item 15.000 for the address.

Replace filter tubes every 6 months—sooner if the gas flow restriction (pressure drop) exceeds 6 psig. Tag the filter system with the date of initial installation and the dates of subsequent filter replacement.

OPERATION

CAUTION: The gas flow through the TOG must ALWAYS be downward, toward the screen end. To prevent migration of the getter material into downstream piping and valves, NEVER permit the TOG to be blown down backwards, i.e., with gas coming out of the top. Linde recommends that a check valve be installed on the inlet to prevent backflow of the gas through the TOG.

- So long as gas flow remains downward, a vacuum may be pulled on the TOG when changing products. It may, however, take a long time to achieve an acceptable vacuum because the TOG contains very porous material.

- After use, leave the TOG under several hundred psig of positive pressure to help reduce diffusion of oxygen into the system. Installation of a residual pressure gauge (recommended) allows the location to detect leaks and to correct them before the TOG becomes saturated with oxygen.

- Always close one of the TOG system inlet valves after use and prior to relieving pressure on the system. The inlet valve must remain closed until the TOG is used again.

PLUGGED TOGs

Moisture or oil contamination may cause a TOG to become plugged. To correct this condition, follow the procedure below:

1. Blow down and isolate the TOG.

2. Disconnect the TOG inlet and outlet piping and determine the cause of the plug, e.g., compressor diaphragm rupture, product contamination, excess moisture in the system.

3. Correct the problem and install a reconditioned TOG.

4. Follow the procedure below to return a saturated or plugged TOG."

RETURNING A SATURATED OR PLUGGED TOG

1. Bleed internal TOG pressure to less than 25 psig to comply with DOT regulations.

2. Write your location number and address on a tag and attach it to the TOG. If the TOG is plugged or has other problems, write a description of the problem on the tag.

3. Close the end valves.

4. Remove the handwheels and wire them to the TOG.

5. Reinstall the handwheel nuts on the valve stem—this protects the stem threads.

6. Secure the TOG in its steel shipping container and packing crate. Bind at least three (3) straps or bands around the crate.

7. Ship the TOG to East Chicago.

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028
Tel. # 609-633-7141

Scott A. Weiner
Commissioner

Karl J. Delaney
Director

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

MAY 3 1993

William L. Warren, Esq.
Cohen Shapiro et al.
Princeton Pike Corporate Center
1009 Lenox Drive; Bldg. 4
Lawrenceville, NJ 08648

RE: Administrative Consent Order (ACO) In the Matter of Praxair, Inc.
ECRA Case #90367

Dear Mr. Warren:

Enclosed are two (2) originals of the above referenced ACO already signed by the Department. Please have your clients sign both originals and return one (1) original to the Department.

Please note the following terms found in this ACO:

1. The effective date of this ACO shall be the date that the last Ordered Party signs this ACO subject to the conditions specified in Paragraph 15;

2. Any person signing this ACO shall provide the Department with appropriate documentation pursuant to Paragraph 11 concerning their authority to sign for the Ordered Party.

3. Financial Assurances required by Paragraphs 9.A and 15 in the amount of $50,000.00 shall be obtained on or before the effective date of this ACO or as required by the applicable sections of this ACO.

4. This ACO shall be returned to the Department along with the Financial Assurance within five (5) business days of the effective date.

5. If this ACO is not signed and returned to the Department within thirty (30) days of the date signed by the Department, this ACO shall become null and void.

Should you have any questions regarding this ACO, please contact Todd Normane at (609) 633-7141.

Sincerely,

Anthony Cinque, Section Supervisor
Bureau of Applicability and Compliance

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028
Tel. # 609-633-7141

Scott A. Weiner
Commissioner

Karl J. Delaney
Director

MAY 3 1993

IN THE MATTER OF	:	SECOND AMENDMENT TO
PRAXAIR, INC.	:	ADMINISTRATIVE
	:	CONSENT ORDER

ECRA CASE #90367

The following FINDINGS are made and ORDER is issued pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection and Energy (hereinafter "NJDEPE") by N.J.S.A. 13:1D-1 et seq. and the Environmental Cleanup Responsibility Act, N.J.S.A. 13:1K-6 et seq., and duly delegated to the Assistant Director for the Industrial Site Evaluation Element within the Division of Responsible Party Site Remediation pursuant to N.J.S.A. 13:1B-4.

FINDINGS

1. Praxair, Inc. (Praxair or Ordered Party) entered into an Administrative Consent Order (ACO) with NJDEPE effective June 30, 1992 (the Praxair ACO), ECRA Case #'s 90254, 92369, 92370, 92372, 92373 and 92336, to allow Praxair to complete a transfer of ownership in the form of a spinoff to the shareholders of Union Carbide Corporation prior to the completion of the standard ECRA administrative process.

2. Linde Gases of the Mid-Atlantic, Inc. ceased operations at the Linden facility in or about June 1990. The Linden facility was not included in the Praxair ACO dated June 30, 1992.

3. Praxair entered into an Amendment to the Praxir ACO with NJDEPE effective September 21, 1992 (Praxair ACO Amendment), ECRA Case #90254, to allow Praxair to sell the real property at the Newark facility to Edward J. Haefeli (Newark Sale). Linde Gases of the Mid-Atlantic ceased operations at the Newark facility on or about July 30, 1990.

4. Based on the above, NJDEPE has determined that the failure of Praxair to include the Linden facility in the Praxair ACO dated June 30, 1992 was a violation of N.J.S.A. 13:1K-9(a) and N.J.A.C. 7:26B-5.1, subjecting Praxair to civil penalties pursuant to N.J.A.C. 7:26B-9.3. In addition, NJDEPE has determined that a non-refundable penalty shall be assessed against Praxair for the failure to comply with ECRA and the regulations.

5. Praxair has requested that NJDEPE prepare an Second Amendment to Praxair ACO to incorporate the Linden facility into the spinoff transaction which was the subject of the June 30, 1992 Praxair ACO and to allow Praxir to settle the outstanding penalties.

ORDER

NOW, THEREFORE, IT IS ORDERED AND AGREED THAT:

6. The provisions of this Second Amendment to the Praxair ACO shall become part of the Praxair ACO. The Praxir ACO as amended, shall remain in full force and effect. The June 30, 1992 Praxair ACO, the Praxair ACO Amendment and this Amendment are hereinafter and collectively referred to as the Praxair ACO.

7. Paragraph 5 of the Praxair ACO shall be amended to read as follows:

C. Industrial Establishment(s)

ECRA Case 90367 SIC #:5169

Facility Name: Linde Gases of the Mid-Atlantic, Inc.

"Linden facility"

Facility Location: Foot of South Wood Avenue
Linden City, Union County

Block: 00587 Lot: 00003

Initial Notice Status: Complete

Owner: LCP Chemicals - New Jersey, a division of Hanlin Group, Inc.

Operator: Linde Gases of the Mid-Atlantic, Inc., a New Jersey corporation.

8. Praxair shall amend the Initial Notice (commonly referred to as ECRA I and II) submitted, ECRA Case #90367, for the Praxair spinoff.

9. Conditions for Financial Assurance

A. The Ordered Party(ies) shall obtain and provide to NJDEPE financial assurance in a form acceptable to NJDEPE in the amount of $50,000.00 for the Linden facility. The financial assurance must conform with the requirements of N.J.S.A. 13:1K-9(b)3, N.J.A.C. 7:26B-6, and this ACO. This financial assurance shall be submitted to NJDEPE along with a fully executed ACO pursuant to Paragraph 15 of this ACO.

B. The Ordered Party(ies) shall establish and submit to NJDEPE a standby trust fund within five (5) days from the effective date of this ACO.

The financial institution which issues the financial assurance shall agree to promptly and directly deposit all amounts up to the total value of the financial assurance into the standby trust fund upon demand by NJDEPE.

C. Upon NJDEPE approval of a Cleanup Plan for the Linden facility, the Ordered Party(ies) shall amend the amount of the financial assurance, specified in Paragraph 9.A above, to equal the estimated cost of implementation of the approved Cleanup Plan, or shall provide such other financial assurance as may be approved by NJDEPE in an amount equal to the estimated cost of implementation of the approved Cleanup Plan.

D. In the event that NJDEPE determines that the Ordered Party(ies) has failed to perform any of its obligations under this ACO or ECRA at the Linden facility, NJDEPE may draw on the financial assurance; provided, however, that before any such demand is made, NJDEPE shall notify the Ordered Party(ies) in writing of the obligation(s) with which it has not complied, and the Ordered Party(ies) shall have reasonable time, not to exceed fourteen (14) days, to perform such obligation(s) to NJDEPE's satisfaction. Nothing in this paragraph shall prevent NJDEPE from collecting stipulated penalties pursuant to the terms of this ACO for cause.

E. Upon NJDEPE's written approval of a Negative Declaration(s) for the Linden facility, the Ordered Party(ies) shall be relieved of any further obligation to maintain in full force and effect the financial assurance required by this ACO for the Industrial Establishment(s) which is the subject of the NJDEPE-approved Negative Declaration(s). Upon NJDEPE's written approval of the completion of any cleanup required by this ACO, as verified by final site inspection(s) pursuant to N.J.A.C. 7:26B-5.7, and upon the Ordered Party(ies')'s satisfaction of all financial obligations in connection therewith, the Ordered Party(ies) shall be relieved of any further obligation to maintain in full force and effect the financial assurance required by this ACO for the facility at which the approved cleanup has been completed.

10. Praxair agrees not to contest the authority or jurisdiction of the Department to issue this Amendment. The Ordered Party(ies) further agrees not to contest the terms or conditions of this Amendment except as to interpretation or application of such terms and conditions in any action brought by the NJDEPE to enforce the provisions of this Amendment.

11. Any signatory to this Amendment, who is executing this Amendment on behalf of an entity other than that individual, shall provide to NJDEPE appropriate documentary evidence as specified in N.J.A.C. 7:26B-1.13 authorizing the signatory to bind the entity to the provisions of this Amendment. This documentary evidence shall be submitted to NJDEPE along with this executed Amendment.

12. Any Ordered Party to this Amendment shall provide to NJDEPE at least thirty (30) days prior written notice of the dissolution of its corporate

identity or liquidation of its assets, and shall provide immediate written notice to NJDEPE of filing of a petition for bankruptcy no later than the day after filing. Upon receipt of notice of dissolution of corporate identity, liquidation of assets or filing of a petition for bankruptcy, NJDEPE may request and within fourteen (14) days of NJDEPE's written request an Ordered Party shall obtain and submit to NJDEPE, additional financial assurance pursuant to this Amendment.

13. Except as otherwise set forth herein, by the execution of this Amendment the Department does not release any person from any liabilities or obligations such person may have pursuant to ECRA and the Regulations, or any other applicable authority, nor does the NJDEPE waive any of its' rights or remedies pursuant thereto.

14. By letter dated April 21, 1993, Praxair submitted a payment of $3500.00 in settlement of the penalty assessment for the administrative violations of ECRA alleged by NJDEPE as referenced in Paragraph 4 of this Amendment. Praxair's submission of the above referenced penalty payment does not constitute an admission of liability or any admission or waiver by Praxair regarding the law, facts and circumstances surrounding the subject of this Amendment. Payment of this penalty shall not relieve Praxair of its obligation to fully comply with the Praxair ACO. Furthermore, NJDEPE's acceptance of the penalty shall not be construed as a waiver of NJDEP's right to compel Praxair to specifically perform their obligations under this ACO.

15. This Amendment shall take effect upon the execution of this Amendment by the parties. This Amendment shall be null and void unless the Praxair submits this signed Amendment to NJDEPE within thirty (30) days of signing of this Amendment by NJDEPE. Praxair shall submit a fully executed Amendment to NJDEPE within five (5) business days from the effective date.

NEW JERSEY DEPARTMENT OF
ENVIRONMENTAL PROTECTION AND ENERGY

Date: 4/30/93

By: _____
KENNETH T. HART, ASSISTANT DIRECTOR
INDUSTRIAL SITE EVALUATION ELEMENT

PRAXAIR, INC.
("ORDERED PARTY")

Date: _____

By: _____

Name: _____

Title: _____

cc: N.A. DiFranco
G. Hoering
original to me
DOT

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1009 LENOX DRIVE-BUILDING FOUR
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ROBERT J. YARBROUGH
STEPHEN V. YARNELL

April 21, 1993

DIRECT DIAL:
(609) 895-8203

REPLY TO:

Mr. Kenneth T. Hart
Assistant Director
Department of Environmental Protection and Energy
Bureau of ECRA Applicability and Compliance
Industrial Site Evaluation Element
401 E. State Street - 5th Floor
Trenton, New Jersey 08625-0028

Received this ___ day of April, 1993.

Signature

Print Name Here

RE: ECRA Case No. 90367 - Praxair, Inc., Linden, New Jersey

Dear Mr. Hart:

In response to your letter of April 2, 1993 which was received in this office on April 6, 1993, I enclose a check in the amount of THREE THOUSAND FIVE HUNDRED Dollars and NO cents ($3500.00) in full settlement of allegations by the Department that a violation of the Environmental Cleanup Responsibility Act resulted from the omission of the former Linde Gases of the Mid-Atlantic, Inc. facility in Linden, New Jersey in the June 1992 Administrative Consent Order. This payment is made to avoid the expense and inconvenience of litigation and does not constitute an admission of liability or any admission or waiver regarding the law, facts and circumstances surrounding the above-referenced matter.

Yours very truly,

William L. Warren

enclosure
cc: Richard G. Tisch, Esquire, Praxair, Inc.
Ms. Tina Layre, New Jersey Department of Environmental Protection and Energy

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4/15/93 15:48

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12/91 cc: N.A. DiFranco Keast v Reform Zone pd

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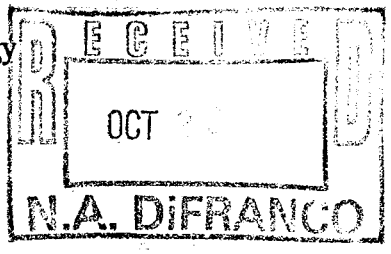
† NOT ADMITTED IN PENNSYLVANIA

October 19, 1992

DIRECT DIAL: 609-895-6203

REPLY TO: Lawrenceville

Mr. Todd Normane
New Jersey Department of Environmental Protection and Energy
Industrial Site Evaluation Element
Bureau of ECRA Applicability and Compliance
401 East State Street - 5th Floor
Trenton, New Jersey 08625-0028



RE: In the Matter of Praxair, Inc.
ECRA Case No. 90254; Linden Facility Proposed Penalty

Dear Mr. Normane:

I understand that the Department is considering assessing a penalty against Praxair, Inc., ("Praxair") pursuant to the Environmental Cleanup and Responsibility Act, N.J.A.C. 13:1K-6 *et seq.* ("ECRA"). The basis for such punitive action appears to be that a facility owned by LCP Chemicals in Linden, New Jersey was not included in the Administrative Consent Order ("ACO") authorizing the spin-off of Praxair from Union Carbide Corporation. However, an examination of the facts relating to this Linden facility as well as an examination of the ECRA statute and its implementing regulations discloses that any assessment of a penalty in this case is inappropriate.

As I believe you know, neither Union Carbide, nor Praxair, nor any of their subsidiaries has ever at any time owned the LCP Chemicals facility at issue in Linden. Rather, Linde Gases of the Mid-Atlantic, Inc. ("Linde Gases"), a subsidiary of Praxair, was formerly a tenant at the facility. Linde Gases, however, has not been a tenant at this facility for more than two years. Its lease terminated in 1990. At that time Linde Gases properly submitted an ECRA Initial Notice to the Department and began the ECRA process which is still on-going.

When its lease terminated, Linde Gases sold some of its equipment and leased two tanks to the new tenant at the facility. However, the value of the equipment sold to this new tenant, which was fully depreciated at the time of sale, was very much less than 50% of the assets of Linde Gases at the Linden leasehold. Thus, the sale of the

equipment was not an event which triggered ECRA. N.J.A.C. 7:26B-1.3 ["Sale or Transfer of the Controlling Share of the Assets"].

I understand, however, that the Department takes the position that the Linden property owned by LCP Chemical should have been included in the recent ACO Application for the Praxair spin-off even though Linde Gases does not and has never owned the facility. The Department apparently takes this position even though Linde Gases:

- ceased operations at the facility more than two years ago;
- has not been a tenant at the facility for more than two years;
- more than two years ago informed the Department through the ECRA process that it was ceasing operations and that its tenancy was terminating.

Presumably, the Department is taking the position that the Praxair spin-off triggers ECRA with respect to the Linden facility formerly leased by Linde Gases because the spin-off constitutes a program of "planning to sell or transfer operations". N.J.S.A. 13:1K-9.b. However, there are no operations by Linde Gases at the Linden site and have not been for more than two years. ECRA applies only to the "owner or operator of an industrial establishment". N.J.S.A. 13:1K-9. I have reviewed both the ECRA statute and the ECRA implementing regulations in an attempt to find a statutory or regulatory basis for the Department's position that a company which has not engaged in any operations at a facility for more than two years should be considered an "operator" of that facility. Neither the ECRA statute nor its implementing regulations contain any such provision.

The ECRA statute contains no definition of the term "operator". The regulations implementing that statute similarly contain no definition of the term "operator". It is, therefore, difficult to understand the statutory or regulatory basis for the Department's position that a company whose leasehold is terminated and has not engaged in any industrial activities whatsoever at a site for more than two years is nevertheless a present "operator" of that site. Given the absence of any language in either the ECRA statute or its implementing regulations which make a former operator into a present operator for ECRA purposes, it is even more difficult to understand how the

Department could expect a reasonable person reviewing the statute and regulations to understand that a company is a present "operator" for ECRA purposes if:

- it does not and has never owned the facility,
- its lease terminated more than two years ago,
- it has not had any employees at the property engaging in industrial activities for more than two years, and
- it has not produced a single unit of product at the facility for more than two years.

Certainly Praxair would not be considered a present "operator" at the site as the term "operator" is commonly understood. It is only a present "operator" at the site if there exists a regulatory definition of "operator" in the ECRA statute or the implementing regulations which supersedes the normal definition which a reasonable person would apply to the term "operator". There is, however, no such superseding definition in the statute or its implementing regulations.

The Department quite properly used the ECRA implementing regulations to communicate to the regulated community any expansion of the ECRA statute by the Department beyond the plain language contained in the statute. Obviously, it recognizes its obligation to communicate to the regulated community interpretations of the ECRA statute which are not clear from the face of the statute. For example, no reasonable person could be expected to glean from the definition of "industrial establishment" in the ECRA statute at N.J.S.A. 13:1K-8.f. that this definition includes contiguous undeveloped lots and blocks controlled by the same owner or operator even if not used in conjunction with the business. The Department, therefore, in its regulations at N.J.A.C. 7:26B-1.3 ("Industrial Establishment"), communicated this interpretation to the regulated community.

The Department, however, has not seen fit to communicate to the regulated community its conclusion that for ECRA purposes a company remains an "operator" of an industrial establishment until it has completed its ECRA obligations with respect to that establishment even if those obligations, as here, are not completed until years after the company has terminated it occupancy at the facility. Such an interpretation of the term "operator", of course, is significantly different from the interpretation which the Department has given that term under virtually every other circumstance with which I am familiar. For example, the Department would not hold a former tenant responsible under the Spill Act as an "operator" for discharges which take place after the termination of the tenancy simply because the former tenant has not completed its ECRA obligations. Indeed, I am unaware of any other instance in which the Department would

allege that a company with no interest in a piece of property, either as owner or lessee, would be an "operator" with respect to that piece of property.

The lack of notice to the regulated community is more than just ethically problematic. It has legal and even constitutional implication. As you know, regulations are subject to the same canons of construction as are statutes. Essex County Welfare Board v. Klein, 373 A.2d 691, 694; 149 N.J. Super. 241, 247 (1977). An elementary canon of statutory construction is that punitive provisions "must be construed 'so as to avoid the unfairness of arbitrary enforcement.'" State v. Hodge, 471 A.2d 389, 392; 95 N.J. 369, 374 (1984)(quoting State v. Maguire, 423 A.2d 294, 84 N.J. 508, 514 n.6 (1980)). This principle is consonant with the constitutional imperatives of due process. The doctrine that a statute or regulation which does not provide affected parties with proper notice of regulated or proscribed behavior is "void for vagueness" is, indeed, grounded in due process:

> [A] legislative act . . . must not be so vague that a person of ordinary intelligence is unable to discern what it requires , prohibits, or punishes. No one should be criminally responsible for conduct that could not reasonably be understood to be proscribed.

Brown v. City of Newark, 552 A.2d 125, 129; 113 N.J. 565, 572-573 (1989)(citations omitted). The doctrine applies to civil as well as criminal laws, and invalidates laws which "fail to provide adequate notice of their scope and sufficient guidelines for their application." Leonen v. John-Mansville Corp., 717 F. Supp. 272, 279 (D.N.J. 1989)(citations omitted).

Clearly, the absence of a definition of a crucial term such as "operator" from both the ECRA statute and regulations, especially where the Department's determination goes beyond the common meaning of the term, is an infirmity which has serious due process implications. Without notice of the unusual interpretation of the term advanced by the Department, the regulated community cannot know the scope of the statute's applicability and is thus denied its due process rights. Given the absence of any provision in the ECRA statute or the regulations implementing that statute which either defines the term "operator" or indicates that a former tenant of an industrial property is deemed to be an operator until such time as it completes its ECRA obligations, it is inappropriate either to demand that the Linden property formerly leased by Linde Gases be included in the Praxair ACO or to threaten a penalty because the facility was not included in the ACO. Rather, if the Department intends to maintain a position which is not apparent to a reasonable person from a review of either the ECRA statute or the implementing regulations, the Department should either have the statute amended or the regulations modified to communicate this position to the regulated community.

As the Department is well aware, Praxair went to extraordinary lengths to ensure that the very complicated ECRA process arising out of the spin-off would be properly accomplished. In its effort to fully comply with the letter and spirit of ECRA, Praxair:

- discussed the application of ECRA to this transaction by telephone with the Division director;
- requested a meeting with the Department's senior ECRA management team to discuss the transaction and make sure that it understood exactly what its obligations were;
- met with Messrs. Hart, Goldstein and Bono to this end and subsequently participated in a teleconference with Messrs. Delaney and Hart.

At every step of the pre-ECRA process, Praxair accepted, without quibble, the Department's position with respect to the applicability of ECRA to the transaction and the various facilities owned or operated by Praxair and its subsidiaries. It acted in good-faith and pursuant to the Department's guidance every step of the way. Praxair reviewed its real estate inventory to identify every single property in the State of New Jersey that it either owned or leased. Each of these properties was the subject of either an ACO application or a Letter of Non-Applicability Application. It submitted sixteen different applications for Letters of Non-Applicability and included six facilities in the final Administrative Consent Order. The Linden property was not included simply because it did not appear on any of the company's current property inventories. After all, the company has had no interest in the property for more than two years.

For more than two years, Praxair has been moving the Linden property through the ECRA process. The Department has at all times been well aware of the former connection between Linde Gases and the Linden property. Yet, at no time during any of the meetings with Department representatives concerning the application of ECRA prior to the Praxair spin-off; at no time during the multitude of telephone calls with representatives of the Department concerning application of ECRA to the Praxair spin-off; at no time in connection with any of the multitude of applications made to the Department in connection with the Praxair spin-off did anyone from the Department inform Praxair that the Linden facility formerly leased by Linde Gases and already moving through the ECRA process should be included in its ACO application.

Quite obviously, Praxair is a company which has gone to extraordinary lengths to attempt to understand and satisfy its ECRA obligations. Equally obviously, the interpretation of the ECRA statute advanced by the Department cannot be easily gleaned (arguably, cannot be gleaned at all) from the text of the statute and has never been communicated to the regulated community through any of the myriad of ECRA

regulations published by the Department. It is actions such as this, an attempt to penalize a company which has acted reasonably and in good-faith, which so disturbs the regulated community in this State and leads to the "Not New Jersey" attitude which is increasingly prevalent in the business community. No one has or can argue that Praxair has acted in anything but extraordinarily good-faith. No one has or can argue that any action or failure to act by Praxair has to any degree whatsoever impacted either public health or the environment. No one has or can argue that by reviewing either the ECRA statute or its implementing regulations Praxair should have understood that the Department considers it to be a current operator of a plant which it does not own, which it does not lease, and at which it has not produced a single unit of product for more than two years. These facts should not give rise to any penalty.

I understand that the ECRA being conducted by Praxair with respect to the Linden facility at issue here is on-going without any significant problems or delays. Under these circumstances, I would strongly urge not only that no penalty be assessed against Praxair but that, in light of the absence in either the statute or the regulations of a provision that a former lessee continues as an operator of a facility until the ECRA process has been completed, the Linden facility not be added to the Praxair Administrative Consent Order. Instead, it should continue through the ECRA process in the normal course of events as has been the case for the past two years. If, after reviewing this letter, you still believe that a penalty is appropriate, I would ask for the opportunity to meet with Mr. Delaney before any penalty is imposed.

Yours very truly,

William L. Warren

WLW:np
cc: Mr. Karl Delaney, Director
Mr. Ken Hart, Assistant Director
Mr. Ken Goldstein, Bureau Chief
Ms. Tina Layre

Blind cc: Richard Tisch, Esquire

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* ADMITTED IN NEW JERSEY
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† NOT ADMITTED IN PENNSYLVANIA

August 17, 1992

DIRECT DIAL: 609-895-6203

REPLY TO: Lawrenceville

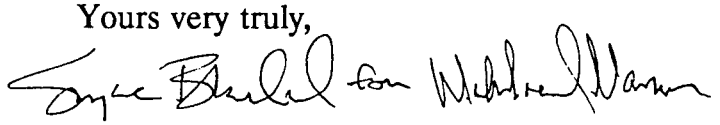
Ms. Tina Layre
New Jersey Department of Environmental Protection and Energy
Bureau of ECRA Applicability and Compliance
Industrial Site Evaluation Element
401 East State Street, 5th Floor
Trenton, New Jersey 08625-0028

RE: In the Matter of Praxair, Inc., ECRA Case #'s 90254, 92369, 92370, 92372, 92373 and 92336; Application for Amendment Regarding the Facility Located at the Foot of South Wood Avenue, Linden, New Jersey

Dear Tina:

I am enclosing under cover of this letter the application for an Administrative Consent Order amendment for the Linden facility formerly operated by Linde Gases of the Mid-Atlantic, a wholly owned subsidiary of Praxair, Inc., as you requested. As I stated to you during our telephone conversation, I do not believe that there is any basis in statute or regulation for the inclusion of this facility in the Administrative Consent Order recently executed by Praxair, Inc. In order to avoid any controversy, however, Praxair, Inc. has agreed to submit this application. Submission of this application should not be interpreted as an agreement by or on behalf of Praxair, Inc. that any statutory or regulatory obligation exists which would require inclusion of the Linden facility in an Administrative Consent Order. Rather, this application is made to avoid any unnecessary conflict with the Department, as the Linden facility is already moving through the ECRA process.

Yours very truly,



William L. Warren

WLW:np
Enclosure

ECRA-012 (3/91)

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
INDUSTRIAL SITE EVALUATION ELEMENT
CN 028, TRENTON, N.J. 08625

ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA)

ADMINISTRATIVE CONSENT ORDER AFFIDAVIT

The purpose of this application is to solicit an Administrative Consent Order (ACO) from the New Jersey Department of Environmental Protection. The ACO will allow the transaction or closing to occur prior to full compliance with the act. In return, the ordered party agrees to fully comply with the ACO. Fee is $2,000 (ACO) or $500 (Amendment).

PLEASE TYPE OR PRINT

Date August 17, 1992

A. Has an ACO previously been executed for this site? ___Yes _X_No

If yes: Case Number_____
Ordered Party_____
Date of Execution_____

B. Has an Initial Notice been filed for this transaction? _X_Yes ___No

If yes: Case Number 90367

If no, attach a completed ECRA 1, **General Information Submission** (N.J.A.C. 7:26B-3.2), to this application for each facility to be included in the ACO along with appropriate fees pursuant to N.J.A.C.7:26B-1.10. If the applicant is proposing a financial assurance less than $100,000 for this site, include a fully completed **Site Evaluation Submission** in accordance with N.J.A.C. 7:26B-7.3(b).

C. The ordered party in this ACO will be the following: *(Attach additional sheets if there are multiple ordered parties.)*

Name Praxair, Inc.

Address 39 Old Ridgebury Road

City of Town Danbury State CT Zip Code 06817-0001

State of Incorporation, if applicable Delaware

D. Designate lead ordered party in instances where multiple ordered parties are proposed.

Name N/A

Address_____

City of Town_____ State_____ Zip Code_____

State of Incorporation, if applicable_____

E. Industrial Establishment(s) in New Jersey: *(Attach additional sheets if there are more than one to be included in ACO.)*

Name Linde Gases of the Mid-Atlantic, Inc.

Street Address Foot of South Wood Avenue

City or Town Linden State NJ Zip Code 07036

Municipality Linden County Union

Block(s) 00587 Lot(s) 00003

State(s) of Incorporation New Jersey

Standard Industrial Classification (SIC) Number 5169

F. Description of Industrial Establishment operations (*be specific; use additional sheets if ore than one Industrial Establishment.*):

Former hydrogen filling station for cylinders and tube trailers for delivery to customers.

G. Current owner of the property for which this ACO is requested (*Use additional sheets if more than one*):

Name LCP Chemicals - New Jersey, a division of Hanlin Group, Inc.

Street Address P. O. Box 484, Foot of South Wood Avenue

City or Town Linden State NJ Zip Code 07036

State of Incorporation, if applicable DE

H. Individual submitting this request:

Name William L. Warren

Affiliation Cohen, Shapiro, Polisher, Shiekman and Cohen

Address 1009 Lenox Drive

City or Town Lawrenceville State NJ Zip Code 08648

Phone Number (609) 895-1600

Who do you represent? Praxair, Inc.

I. Describe, in detail, the transaction for which this ACO is requested (closing, selling, stock purchase, etc.): (*Attach additional sheets, if necessary.*)

This amendment to the Administrative Consent Order executed by Praxair, Inc. on June 30, 1992 involves the addition of the Linden property, now undergoing ECRA cleanup as a result of the expiration of the Linde Gases lease and the consequent cessation of operations at the site by Linde Gases.

J. Attach any agreement(s), termination notices, or letter(s) of intent for this sale, stock purchase, leasehold termination, or closing, if not previously submitted as part of the Initial Notice.

Date the agreement or Letter of Intent was signed

Date for closing the transaction Spin-off took place June 30, 1992

Date for cessation of operations June 1990

Will operations continue at the Industrial Establishment? X Yes __No

If so, name of entity Ultrapure Compressed Gases, Inc. (1990)

K. State the criteria as listed in N.J.A.C. 7:26B-7.1, upon which this ACO is being requested and appropriate justification to support the criteria.

Not applicable - ACO amendment application

L. Purchaser or new lessee: *(Attach additional sheets, if necessary)*

Name Ultrapure Compressed Gases, Inc. (1990)

Address Foot of South Wood Avenue

City or Town Linden State NJ Zip Code 07036

State of Incorporation NJ

M. Partnerships: If the owner, operator, and/or ordered party is a partnership, give type of partnership (limited/general) and state where registered. If a general partnership, attach a list of the names and addresses of all current general partners, or, if a limited partnership, attach the Certificate of Limited Partnership and identify managing general partner(s).

N/A

N. Source(s) of Environmental Concern - Answer all categories concerning the Industrial Establishment and attach sheets providing any additional information on applicable areas.

1. Are there any Drum Storage Areas? (Y/N) Y (property of Active Water Jet, using the facility for maintenance & storage space)

- How many are located inside? 0 How many are located outside? 1
- How many outside are on pads? 1 Are they diked and curbed? (Y/N) N Are they covered? (Y/N) N
- How many are on soil? 0 Are they diked and curbed? (Y/N) - Are they covered? (Y/N) -

2. Are there any Above Ground Storage Tanks? (Y/N) Y

- How many are located inside? 0 How many are located outside? 4
- How many outside are on pads? 4 Are they diked and curbed? (Y/N) N Are they covered? (Y/N) N
- How many are outside on soil? 0 Are they diked and curbed? (Y/N) - Are they covered? (Y/N) -
- What substance(s) are stored/# of gallons? 18,000 gal. liq. hydrogen; 1,500 gal. liq. nitrogen; Active Waterjet has 2 approximately 500 gal. tanks
- Are they RCRA permitted? (Y/N) N

3. Are there any Underground Storage Tanks (UGSTs)? (Y/N) Y How many? 1

- What substances are stored/# of gallons? N/A - approx. 1,000 tank abandoned in place
- How many UGSTs have been tested? 0 How many UGSTs passed? __ Date(s) tested: __
- Are they RCRA permitted? (Y/N) N

4. Are there any Monitoring Wells on site? (Y/N) Y How many are permitted? 7

5. Are there any discharges to: Surface Water? (Y/N) N Permitted? (Y/N) ___
Ground Water? (Y/N) N Permitted? (Y/N) ___
Sanitary Sewer? (Y/N) N Permitted? (Y/N) ___
Storm Sewer? (Y/N) N Permitted? (Y/N) ___
Air (Y/N) N Permitted? (Y/N) ___

6. Are there any: Landfills (Y/N) N Permitted? (Y/N) ___
Waste Piles? (Y/N) Y Permitted? (Y/N) ____
(soil from remediation activities)

7. Are there any Transformers? (Y/N) Y How many are interior? 0 PCB? (Y/N)___
How many are exterior? 3 Public/Private? (Y/N) public PCB? (Y/N) N

8. Are there any: Lagoons? (Y/N) N Permitted? (Y/N) ___ RCRA Permitted? (Y/N)___
Surface Impoundments? (Y/N) N Permitted? (Y/N) ___
Fire Ponds? (Y/N) N Permitted? (Y/N) ___
Stormwater Retention Basins? (Y/N) N Permitted? (Y/N) ___

9. Are there are any: Septic Systems? (Y/N) Y Sanitary use? (Y/N) Y Industrial use? (Y/N) N
Dry Wells? (Y/N) N Sanitary use? (Y/N) ___ Industrial use? (Y/N) ___
Seepage Pits? (Y/N) N Sanitary use? (Y/N) ___ Industrial use? (Y/N) ___

10. Are there any Spill Areas? (Y/N) Y Type of spill and # of gallons: use oil - quantity unkown
Was area remediated? (Y/N) yes - under ECRA review

11. Are there any Loading Docks? (Y/N) N How many are paved? ___ How many are covered? ___

12. Are there any Rail Sidings? (Y/N) N

13. Are there any Pumping Stations? (Y/N) N

14. Are there any Dumpsters? (Y/N) Y Household use? (Y/N) Y Industrial Use? (Y/N) N

15. Are there any: Floor Drains? (Y/N) Y What is the discharge point? underground to LCP
Roof Drains? (Y/N) Y What is the discharge point? underground to LCP

16. Does the Building interior contain Asbestos? (Y/N) Y Deteriorated Floors? (Y/N) N Vents? (Y/N) N
Equipment Decontamination? (Y/N) N (transite board blowout panels in good condition)

17. Any other areas? No

O. Summary of Enforcement Actions for Violation of Environmental Laws or Regulations:

List any civil/criminal actions taken against the owner or operator, managers or officials of the Industrial establishment(s) for violations of any environmental laws or statutes. (*Attach additional sheets, if necessary.*)

Check here if no enforcement actions are involved ___ See Attachment A

Date of Action _____

Section of Law or Statute violated _____

Type of Enforcement Action _____

Description of the Violation _____

_____

_____

How was the violation resolved? _____

P. Previous Owner and Operator for history since December 31, 1983: *(Attach additional sheets if necessary)*

Name	Owner/ Operator	From	To
Linde Gases of the Mid-Atlantic,	formerly	1950	present
Union Carbide, Linde Division, formerly Union Carbide Industrial Gases, Inc.	(operator)		
LCP Chemicals - New Jersey, a division of Hanlin Group, Inc. formerly Linden Chlorine Products	owner	1980	present

Brief description of past operation(s) conducted on site since December 31, 1983:
(Attach additional sheets if necessary)

Former hydrogen filling station for cylinders and tube trailers for delivery to customers.

Q. Purchaser or New Lessee Authorization:

I am the purchaser __ and/or new lessee __ of this Industrial Establishment. I have read this application and am aware of the requirements and conditions of ECRA Administrative Consent Orders. I agree to allow the seller, previous owner, previous tenant, an ordered party under an ECRA ACO or any of their respective agents or assignees plus the Department of Environmental Protection the right to enter the Industrial Establishment after I own it or lease it for the purpose of Environmental investigation and cleanup, if required. Additionally, I understand that if a cleanup is warranted at this Industrial Establishment, a deed notice or restriction may be part of a remediation plan approved by the Department.

Sworn to and Subscribed Before Me
on this _____
Date of _____, 19____

_____
Notary Public

_____
Signature

_____
Printed Name

_____
Title Company

_____
Date

(Complete this section for each Industrial Establishment)

R. Owner and Operator Authorization:

I hereby certify that I am fully aware of the requirements of the Environmental Cleanup Responsibility Act in particular the owner/operator responsibilities pursuant to the ECRA regulation, N.J.A.C. 7:26B. I acknowledge that an Administrative Consent Order has been requested to allow this transaction to proceed prior to full ECRA compliance and that the ordered party is agreeing to resolve all ECRA matters. I further acknowledge that the execution of an ACO by the ordered party shall not release me from any responsibilities I have pursuant to ECRA and the regulations.

Signature-Property Owner

Randall W. Hansen
Printed Name

Executive Vice President
& General Manager - Chemicals
Title

ECP Chemicals, a Div. Hanlin Group, Inc.
Company

8/11/92
Date

Sworn to and Subscribed Before Me
on this 11th
Date of August 19 92

Jill D. Auburn
Notary Public

JILL D. AUBURN
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires Jan. 21, 1996

Signature-Operator of Industrial Establishment

Printed Name

Title Company

Date

Sworn to and Subscribed Before Me
on this_____
Date of_____ 19____

Notary Public

S. CERTIFICATIONS:

1. The following certification shall be signed by the highest ranking individual at the site with overall responsibility for that site or activity. Where there is no individual at the site with overall responsibility for that site or activity, this certification shall be signed by the individual having responsibility for the overall operation of the site or activity.

I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of N.J.S.A. 13:1K-6 et seq. I am personally liable for the penalties set forth at N.J.S.A. 13:1K-13.

Typed/Printed Name_____ Title_____

Signature_____ Date_____

Company_____

Sworn to and Subscribed Before Me
On this_____
Date of_____ _____

_____
Notary

S. CERTIFICATIONS:

1. The following certification shall be signed by the highest ranking individual at the site with overall responsibility for that site or activity. Where there is no individual at the site with overall responsibility for that site or activity, this certification shall be signed by the individual having responsibility for theoverall operation of the site or activity.

   I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of N.J.S.A. 1 3:1K-6 et seq., I am personally liable for the penalties set forth at N.J.S.A. 13:1K-13.

   Typed/Printed Name John R. Crane Title Plant Manager

   Signature [signature] Date 8-10-92

   Company Praxair Incorporated

   Sworn to and Subscribed Before Me
   on this 10th
   Date of August 19 92
   [signature]
   Notary

2. The following certification shall be signed as follows:

   1. For a corporation, by a principal executive officer of at least the level of vice president;
   2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
   3. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.

   I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of N.J.S.A. 13:1K-6 et seq., I am personally liable for the penalties set forth at N.J.S.A. 13:1K-13.

   Typed/Printed Name E. G. Hotard Title President

   Signature [signature] Date 8/13/92

   Company Praxair, Inc.

   Sworn to and Subscribed Before Me
   on this 13th
   Date of August 1992
   [signature]
   Notary

   SUSANNE RUOKONEN
   NOTARY PUBLIC
   MY COMMISSION EXPIRES MARCH 31, 1993

Have you enclosed a check or money order for $2,000 (ACO) or $500 (Amendment)?

____ Yes ____ No

ATTACHMENT A

Summary of Enforcement Actions for Violation of Environmental Laws or Regulations:

A. **Date of Action** 12/18/89

Section of Law or Statute violated N.J.A.C. 7:26-7.4(a)511

Type of Enforcement Action Civil Administrative Penalty Assessment

Description of the Violation The generator failed to obtain the signature and date of acceptance from the hauler.

How was the violation resolved? Generator obtained signature and date from hauler and forwarded corrected manifest to NJDEPE. A penalty of $1,000.00 was also forward to the NJDEPE.

B. **Date of Action** 9/15/88

Section of Law or Statute violated F.4006 & F-2910.4 (Fire Codes)

Type of Enforcement Action Penalty Assessment

Description of the Violation Failure to report an explosion and vapor release of hydrogen into the air to the Fire Department.

How was the violation resolved? Pressure was released from cylinders to prevent recurrence of explosion by trained Linde personnel. A penalty of $1,000.00 was forwarded to the Fire Prevention Bureau.

C. **Date of Action** 12/01/87

Section of Law or Statute violated N.J.S.A. 58:10-23.11(c)

Type of Enforcement Action Notice of Violation

Description of the Violation Discharge of a hazardous substance (Hydrogen Carbon)

How was the violation resolved? The contaminated soil was excavated and disposed of at Envirosafe hazardous waste facility in Ohio.

Form HWM-004
3/87

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
5th Fl., 401 E. State St., Trenton, N.J. 08625

NOTICE OF VIOLATION

ID NO. _____ DATE 12/01/87

NAME OF FACILITY Union Carbide Linden Hydrogen Pump Facility

LOCATION OF FACILITY South Wood Ave Linden N.J.

NAME OF OPERATOR Mr. Galvan

You are hereby NOTIFIED that during my inspection of your facility on the above date, the following violation(s) of the Solid Waste Management Act, (N.J.S.A. 13:1E-1 et seq.) and Regulations (N.J.A.C. 7:26-1 et seq.) promulgated thereunder and/or the Spill Compensation and Control Act, (N.J.S.A. 58:10-23.11 et seq.) and Regulations (N.J.A.C. 7:1E-1 et seq.) promulgated thereunder were observed. These violation(s) have been recorded as part of the permanent enforcement history of your facility.

DESCRIPTION OF VIOLATION N.J.S.A 58:10-23.11(c) Discharge of a hazardous Substance (Hydrogen Carbon)

Remedial action should include the excavation of contaminated soils, soil classification, testing for Total Petroleum Hydrocarbons & PCBs and proper disposal of contaminated soil.

Remedial action to correct these violations must be initiated immediately and be completed by _____. Within fifteen (15) days of receipt of this Notice of Violation, you shall submit in writing, to the investigator issuing this notice at the above address, the corrective measures you have taken to attain compliance. The issuance of this document serves as notice to you that a violation has occurred and does not preclude the State of New Jersey, or any of its agencies from initiating further administrative or legal action, or from assessing penalties, with respect to this or other violations. Violations of these regulations are punishable by penalties of $25,000 per violation.

Adolfo L Davis
Investigator, Division of Waste Management
Department of Environmental Protection
(201) 669-3960

LINDE UNION CARBIDE PACKAGED GASES NATIONAL OFFICE

UNION CARBIDE CORPORATION
LINDE DIVISION
NATIONAL PACKAGED GASES OFFICE
P.O. BOX 6744, 200 COTTONTAIL LANE
SOMERSET, NEW JERSEY 08875-6744

December 23, 1987 **Certified Mail**

Mr. E. L. Davis
New Jersey Department of Environmental Protection
Hazardous Waste Management
2 Babcock Place
West Orange, NJ 07052

SUBJECT: UNION CARBIDE CORPORATION - LINDE DIVISION
SOUTH WOOD AVENUE, LINDEN, NJ - NOTICE OF VIOLATION

Dear Mr. Davis:

This letter is in response to the Notice of Violation (NJSA 58:10-23.11(c) Discharge of a hazardous substance, hydrogen carbon) issued by you to Mr. A. Galvan, during your inspection on December 1, 1987 of the subject facility. Per our telephone conversation on December 18, we appreciate having these extra days to respond during the busy holiday season.

Your inspection was prompted by Mr. Galvan's telephone report of October 14, 1987 to the New Jersey DEP concerning the presence of oil in a soil sample which Linde desires to remove. This oil spill is in the vicinity of the concrete pad on which the Plants' oil collection system is located. The Notice of Violation requires that we indicate to you what corrective measures we are taking to clean up this material.

We have already contracted with IT Corporation located in Edison, New Jersey to perform the removal activity of this material whose preliminary analyses indicate that PCB's are non-detectable and that traces of mercury are present up to 16 ppm.

Our proposed action is as follows: IT Corporation will excavate the area of the spill to include an approximate one foot buffer in all directions beyond visible traces of oil contamination. The excavated soil will be loaded onto bulk trailers and disposed of at the permitted Envirosafe of Ohio hazardous waste disposal facility located in Fondessy, Ohio.

Upon completion of the excavation a composite soil sample taken from at least four sampling points will be analyzed for total hydrocarbons and heavy metals to confirm completeness of the remedial work. The area will be backfilled with clean soil and gravel.

We are in the process of obtaining the necessary internal approvals and coordinating the work schedules with both IT Corporation and Envirosafe. We anticipate this work to be completed before January 31, 1988. As soon as a firm date is obtained for this work we will advise you so that you may coordinate inspection activities with the site remediation.

We trust that the above satisfactorily outlines the removal activity planned for this site. Should you have any question or wish to discuss this matter further, you may contact me at the above address or contact Mr. A. Galvan at: 609-778-6277.

Very truly yours,

N. A. DiFranco
Manager,
Environment & Health

cc: Mr. J. R. Crane
Mr. A. A. Galvan

bcc: Mr. L. E. Barron
Mr. T. E. DeBriae
Mr. R. G. Tisch

LINDE UNION CARBIDE
PACKAGED GASES
NATIONAL OFFICE

UNION CARBIDE CORPORATION
LINDE DIVISION
NATIONAL PACKAGED GASES OFFICE
P.O. BOX 6744, 200 COTTONTAIL LANE
SOMERSET, NEW JERSEY 08875-6744

April 18, 1988

Mr. E. L. Davis
N. J. Department of Environmental Protection
Hazardous Waste Management
2 Babcock Place
West Orange, NJ 07052

Subject: Union Carbide Corporation, Linde Division
South Wood Avenue, Linden, New Jersey

Dear Mr. Davis:

This is in response to your request for a written report of the remedial work conducted on the oil contaminated soil behind the subject facility. This was requested by you in our phone conversation of February 16, 1988. The excavation of the oil contaminated soil and backfilling is complete. IT Corporation of Edison, New Jersey was the contractor who conducted the work.

Two areas behind the plant located on either side of the concrete storage pad were cleaned as follows. This is shown on Attachment 1.

Area 1, which is southwest of the pad, was excavated down to the water table at a level of 4 feet in an area approximately 480 sq. ft. in size. Three layers of 6 mil polyethylene sheathing was inserted to line the area. This was backfilled with a layer of certified clear Bank-run number 4 sand and another 6 mil liner was placed on top and covered with a layer of clean washed 1-1/2" crushed quarry stone supplied by a certified fill vendor.

Area 2, which is northeast of the storage pad, covered an area of approximately 300 sq. ft., was excavated to a depth where no visible traces of oil contamination appeared. One layer of 6 mil polyethylene sheathing was installed under a 6 inch layer of clear Bank-run number 4 sand and then covered with 1-1/2" crushed quarry stone. Sand was installed to prevent the stone from puncturing the plastic liner.

The excavated soil was placed in a rolloff container and is awaiting disposal by the contractor, IT Corporation, at Fondessy Enterprises, Inc., in Oregon, OH.

Soil samples were taken from both excavated areas, composited and analyzed for total petroleum hydrocarbons and mercury by the EP Toxicity method to determine the effectiveness of the work. A copy of the analytical results are shown as Attachment 2. Mercury was non-detectable and Petroleum Hydrocarbon analyzed at 600 ppm.

The excavated soil was also sampled and analyzed for the remaining EP Toxicity heavy metals to characterize the soil for disposal purposes. These results are shown in Attachment 3 and indicate that the excavated soil contain no heavy metals exceeding hazardous waste limitations.

Based on the remedial work done and subsequent soil analysis it is Union Carbide's belief that we have satisfactorily resolved the DEP's concern regarding the original report of oil contaminated soil made on 10/14/87. We are requesting your confirmation upon your review of this letter and attachments.

As a separate issue, we had brought to your attention the presence of an oil-like substance with a kerosene odor bubbling from the ground which was found during the excavation of Area 1. This was reported to you on 2/11/88. The oil appeared to be tidal in nature which was apparent from the clearly delineated soil striation. The oil was also observed bubbling into the excavation from below the water line.

We obtained a 2-liter sample of oil/water material from the excavation and a comparable volume sample from the plants' oil collection system. These two samples were sent to Gollob Analytical Services for analysis to determine if the oils were similar. Attachment 4 is a test report from Gollob reporting the results of Gas Chromatography Analysis.

The sample from the plant's oil collection system could not be analyzed due to high boiling characteristics whereas the sample of oil/water from the excavation revealed the presence of #2 fuel oil and kerosene. The difference in physical characteristics between these two samples as noted in the inability to analyze the compressor lube oil, indicates that the oils are dissimilar.

The Linden plant has no active underground tank for fuel oil nor does it use kerosene. It is our conclusion then that the source of this oil and kerosene found in Area 1, though unknown, is unrelated to the operations of the Linden plant. We trust that the foregoing information satisfies any concerns which the Agency may have with this matter. Please understand that this reporting should not be construed as any admission by Union Carbide of any liability associated with the existence of the oil and kerosene in Area 1.

Should you require additional information or wish to discuss this matter further, please contact me at: 609-778-6277.

Very truly yours,

A. A. Galvan,
Eastern Region Operations Manager

AAG:jlm
(1061)

/Attachments

cc: Y. Bashir
J. R. Crane
N. A. DiFranco

LINDE UNION CARBIDE PACKAGED GASES NATIONAL OFFICE

INTERNAL CORRESPONDENCE

NATIONAL PACKAGED GASES OFFICE
P.O. BOX 6744, 200 COTTONTAIL LANE
SOMERSET, NJ 08875-6744
TEL: 201-271-2600
FAX 201-271-2699

To: R. L. Bujalski
Danbury

Date: March 9, 1990

Originating Dept: Environmental Affairs

Copy to:

Subject:

Attached is the Notice of Violation and subsequent fine assessment for Hazardous Waste Manifest discrepancies which have been levied against the Linden, NJ plant.

The NOV and fine result from the omission of the transporters signature and date of shipment when mercury was sent from Linden to Bethlehem Apparatus for recycling. This shipment was handled by IT Corporation during the Linden cleanup project. LGMA has contacted IT Corporation regarding this NOV and fine. IT Corporation has agreed to pay the fine since the manifest discrepancy was their fault.

Let me know if you need additional information.

N. A. DiFranco

NAD:jle
(ltrs3)

/Att.

LINDE GASES
OF THE MID-ATLANTIC

308 Harper Drive
Moorestown, NJ 08057
609-778-6200

December 27, 1989

New Jersey Department of Environmental Protection
Division of Hazardous Waste Management
401 E. State Street
Trenton, NJ 08625

SUBJECT: ID #NJDO11392735
MANIFEST #NYA 7558866

We have received your "Notice of violation" (copy attached) dated 12/18/89.

Also attached is a copy of the subject manifest on which we have obtained the signature of the transporter (IT Corporation). We regret any inconvenience this has caused you.

If there are any questions or if you require additional information, please do not hesitate to contact me at (609) 778-6277.

Very truly yours,

A.M. Duva
Operations Technical Coordinator

CC: Y. Bashir
C.R. Koch
J.R. Crane
R.A. O'Neal

Attachment
AMD/amr

Form HWM-004
3/87

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
5th Fl., 401 E. State St., Trenton, N.J. 08625

NOTICE OF VIOLATION

ID NO. NJD011392735 DATE 12/18/89

NAME OF FACILITY Union Carbide Corp. - Linde D.v.

LOCATION OF FACILITY South Wood Ave, Linden, NJ 07036

NAME OF OPERATOR Attn: Angus Murison, Superintendent

You are hereby NOTIFIED that during my ~~inspection of your facility~~ manifest review on the above date, the following violation(s) of the Solid Waste Management Act, (N.J.S.A. 13:1E-1 et seq.) and Regulations (N.J.A.C. 7:26-1 et seq.) promulgated thereunder and/or the Spill Compensation and Control Act, (N.J.S.A. 58:10-23.11 et seq.) and Regulations (N.J.A.C. 7:1E-1 et seq.) promulgated thereunder were observed. These violation(s) have been recorded as part of the permanent enforcement history of your facility.

DESCRIPTION OF VIOLATION NJAC 7:26-7.4(a)5.i Generator failed to obtain the signature and date of acceptance from the hauler

Submit Response with letter of explanation

Remedial action to correct these violations must be initiated immediately and be completed by 15 days of receipt. Within fifteen (15) days of receipt of this Notice of Violation, you shall submit in writing, to the investigator issuing this notice at the above address, the corrective measures you have taken to attain compliance. The issuance of this document serves as notice to you that a violation has occurred and does not preclude the State of New Jersey, or any of its agencies from initiating further administrative or legal action, or from assessing penalties, with respect to this or other violations. Violations of these regulations are punishable by penalties of $25,000 per violation.

NYA 7558866

Philip Cole

Investigator, Division of Waste Management
Department of Environmental Protection

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE

HAZARDOUS WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA No. NJD011892735	Manifest Document No. 00110 2	2. Page 1 of	Information in the shaded areas is not required by Federal Law.
3. Generator's Name and Mailing Address: UNION CARBIDE CORP. - LINDE DIV. FOOT OF St. Wood Ave., LINDEN, NJ 07036				NY A 558 [illegible]
Generator's Phone: 201 862-92422				[illegible]
5. Transporter 1 (Company Name): IT CORP.	6. US EPA ID Number: NJD000603563			D. Transporter's Phone: [illegible] 396
7. Transporter 2 (Company Name)	8. US EPA ID Number			E. State Transporter's ID
				F. Transporter's Phone
9. Designated Facility Name and Site Address: BETHLENEM APPARATUS COMPANY, INC. HELLERTOWN, PA	10. US EPA ID Number			G. State Facility's ID
				H. Facility's Phone: (215) 838-7034

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
GENERATOR	a. RQ HAZARDOUS WASTE LIQUID, N.O.S. (D009), ORM-E, NA9189	1	CY	00526	P	D009
	b.					
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above: MERCURY

K. Handling Codes for Wastes Listed Above: L

15. Special Handling Instructions and Additional Information: RELEASE No. 201-11 LIQUID MERCURY RECEIVED FOR RECYCLING ONLY
IRD SHIPPING No. IRD006654

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations.

If I am a large quantity generator, I certify that I have program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small generator, I have made a good faith effort to minimize my waste and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Mo.	Day	Year
YAHYA BASHIR	Yahya Bashir	07	21	88

TRANSPORTER	17. Transporter 1 (Acknowledgement of Receipt of Materials)				
	Printed/Typed Name: YAHYA BASHIR	Signature	Mo.	Day	Year
	18. Transporter 2 (Acknowledgement or Receipt of Materials)				
	Printed/Typed Name	Signature	Mo.	Day	Year

FACILITY	19. Discrepancy Indication Space				
	20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.				
	Printed/Typed Name: BRUCE J. LAWRENCE	Signature: Bruce Lawrence	Mo. 07	Day 21	Year 88

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the N.Y. Department of Transportation (518) [illegible]

EPA Form 8700-22 (Rev. 9-86) Previous edition is obsolete.

COPY 2 – Generator State – mailed by TSD facility

P.2

DEC 26 '89 11:03 LINDEN

HH-014-90

Let's protect our earth

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
Lance R. Miller, Acting Director
CN 028
Trenton, N.J. 08625-0028
(609) 633-1408

28 FEB 1990

IN THE MATTER OF	:	
UNION CARBIDE CORPORATION	:	
SOUTH WOOD AVENUE	:	NOTICE OF CIVIL ADMINISTRATIVE
LINDEN, NJ 07036	:	PENALTY ASSESSMENT
	:	

This Notice of Civil Administrative Penalty Assessment is issued pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (hereinafter "NJDEP" or the "Department") by N.J.S.A. 13:1D-1 et seq., and the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq. and duly delegated to the Assistant Director for Enforcement of the Division of Hazardous Waste Management pursuant to N.J.S.A. 13:1B-4.

FINDINGS

1. The Department has determined that Union Carbide Corporation (hereinafter "Union Carbide") is a generator of hazardous waste (EPA ID# NJD 011 392 735) as defined in N.J.A.C. 7:26-1.4 and is located at South Wood Avenue, City of Linden, County of Union, State of New Jersey.

2. On December 18, 1989 a Department representative performed a routine review of manifest number NYA 7558866. This manifest was utilized by Union Carbide for the transportation of a hazardous waste shipment, via IT Corporation of Carteret, New Jersey, (EPA ID# NJD 000 603 563), to Bethlehem Apparatus Company, Incorporated of Hellertown, Pennsylvania, (EPA ID# PAD 002 390 961). The investigation revealed that Union Carbide failed to obtain the handwritten signature of the initial hauler and date of acceptance on the manifest, in section 17 of the above mentioned manifest, in violation of N.J.A.C. 7:26-7.4(a)5ii.

3. Based on the facts set forth in these **FINDINGS**, the Department has determined that Union Carbide has violated the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq. and the regulations promulgated pursuant thereto, N.J.A.C. 7:26-1 et seq., specifically N.J.A.C. 7:26-7.4(a)5ii.

NOTICE OF CIVIL ADMINISTRATIVE PENALTY ASSESSMENT

4. Pursuant to N.J.S.A. 13:1E-9e and based upon the above **FINDINGS**, the Department has determined that a civil administrative penalty should be assessed against Union Carbide in the amount of $1000.00.

5. Payment of the penalty is due when a final order is issued by the Commissioner subsequent to a hearing, if any, or when this Notice of Civil Administrative Penalty Assessment becomes a final order (see following paragraph). Payment shall be made by certified check payable to "Treasurer, State of New Jersey" and shall be submitted to:

New Jersey Department of Environmental Protection
Division of Financial Management Planning and General Services
Bureau of Revenue
CN 402
Trenton, NJ 08625

6. If no request for a hearing is received within twenty (20) calendar days from receipt of this Notice of Civil Administrative Penalty Assessment, it shall become a final order upon the twenty-first calendar day following its receipt and the penalty shall be due and payable.

NOTICE OF RIGHT TO A HEARING

7. Pursuant to N.J.S.A. 52:14B-1 et seq. and N.J.S.A. 13: 1E-9, Union Carbide is entitled to an administrative hearing. Any hearing request shall be delivered to the address below within twenty (20) calendar days from receipt of this Notice of Civil Administrative Penalty Assessment.

Assistant Director for Enforcement
Division of Hazardous Waste Management
401 East State Street
CN 028
Trenton, New Jersey 08625
Attention: Wayne C. Howitz, Assistant Director

8. Union Carbide shall, in its request for a hearing, furnish NJDEP with the following:

a. A statement of the legal authority and jurisdiction under which the hearing or action to be taken is to be held;

b. A reference to the particular sections of the statute and rules involved;

c. A short and plain statement of the matters of fact and law asserted; and

d. The provisions of this Notice of Civil Administrative Penalty Assessment to which Union Carbide objects, the reasons for such objections, and any alternative provisions proposed.

GENERAL PROVISIONS

9. This Notice of Civil Administrative Penalty Assessment is binding on Union Carbide, its principals, directors, officers, agents, successors, assigns, any trustee in bankruptcy or other trustee, and any receiver appointed to a proceeding in law or equity.

10. Notice is given that violations of any statutes, rules or permits other than those herein cited may be cause for additional enforcement actions, either administrative or judicial. By issuing this Notice of Civil Administrative Penalty Assessment the Department does not waive its right to initiate additional enforcement actions.

11. No obligations imposed by this Notice of Civil Administrative Penalty Assessment (with the exception of paragraph (4) above) are intended to constitute a debt, damage claim, penalty or other civil action which should be limited or discharged in a bankruptcy proceeding. All obligations are imposed pursuant to the police powers of the State of New Jersey, intended to protect the public health, safety, welfare, and environment.

12. Notice is given that pursuant to N.J.S.A. 13:1E-9e, the Department is authorized to assess a civil administrative penalty of not more than $25,000 for each violation and additional penalties of not more than $2,500 for each day during which the violation continues.

13. Notice is further given that pursuant to N.J.S.A. 13:1E-9f, any person who violates N.J.S.A. 13:1E-1 et seq. or any code, rule, or regulation promulgated thereunder shall be liable to a penalty of not more than $50,000 per day of such violation, and each day's continuance of the violation shall constitute a separate violation.

14. Notice is further given that pursuant to N.J.S.A. 13:1E-9f, any person who violates an administrative order issued pursuant to N.J.S.A. 13:1E-9c, or a court order issued pursuant to N.J.S.A. 13:1E-9d, or who fails to pay a civil administrative penalty in full after it is due shall be subject upon order of a court to a civil penalty not to exceed $100,000 per day of such violation and each day's continuance of the violation shall constitute a separate violation.

15. Except as provided above in the Notice of Right to a Hearing Section, this Notice of Civil Administrative Penalty Assessment shall be effective upon receipt.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
Wayne C. Howitz
Assistant Director
Hazardous Waste Enforcement

WCH/jbr

LINDE GASES
OF THE
MID-ATLANTIC, INC.
308 Harper Drive
Moorestown, NJ 08057
(609) 778-6200

LINDE

March 9, 1990

Treasurer, State of New Jersey
New Jersey Department of Environmental Protection
Bureau of Revenue
CN 402
Trenton, NJ 08625-0402

SUBJECT: PROGRAM ID. NO. HH0014-90

Dear Sirs:

Please find enclosed the remittance copy of the enforcement invoice and corresponding remittance in the amount of $1,000.00 for program ID. NO. HH0014-90. This payment is made as a result of the Notice of Civil Administrative Penalty Assessment which we received on February 28, 1990.

Should you require anything additional in regards to this matter, please contact me at (609) 778-6338 at your earliest convenience.

Very truly yours,

R.A. O'Neal
Technical Supervisor
PACKAGED GASES AND DISTRIBUTORS

CC: Y. Bashir
J.R. Crane
N.A. DiFranco
J.F. Fischl
C.R. Koch

LINDE UNION CARBIDE PACKAGED GASES NATIONAL OFFICE

UNION CARBIDE CORPORATION
LINDE DIVISION
NATIONAL PACKAGED GASES OFFICE
P.O. BOX 6744, 200 COTTONTAIL LANE
SOMERSET, NEW JERSEY 08875-6744

December 23, 1987 Certified Mail

Mr. E. L. Davis
New Jersey Department of Environmental Protection
Hazardous Waste Management
2 Babcock Place
West Orange, NJ 07052

SUBJECT: UNION CARBIDE CORPORATION - LINDE DIVISION
SOUTH WOOD AVENUE, LINDEN, NJ - NOTICE OF VIOLATION

Dear Mr. Davis:

This letter is in response to the Notice of Violation (NJSA 58:10-23.11(c) Discharge of a hazardous substance, hydrogen carbon) issued by you to Mr. A. Galvan, during your inspection on December 1, 1987 of the subject facility. Per our telephone conversation on December 18, we appreciate having these extra days to respond during the busy holiday season.

Your inspection was prompted by Mr. Galvan's telephone report of October 14, 1987 to the New Jersey DEP concerning the presence of oil in a soil sample which Linde desires to remove. This oil spill is in the vicinity of the concrete pad on which the Plants' oil collection system is located. The Notice of Violation requires that we indicate to you what corrective measures we are taking to clean up this material.

We have already contracted with IT Corporation located in Edison, New Jersey to perform the removal activity of this material whose preliminary analyses indicate that PCB's are non-detectable and that traces of mercury are present up to 16 ppm.

Our proposed action is as follows: IT Corporation will excavate the area of the spill to include an approximate one foot buffer in all directions beyond visible traces of oil contamination. The excavated soil will be loaded onto bulk trailers and disposed of at the permitted Envirosafe of Ohio hazardous waste disposal facility located in Fondessy, Ohio.

Upon completion of the excavation a composite soil sample taken from at least four sampling points will be analyzed for total hydrocarbons and heavy metals to confirm completeness of the remedial work. The area will be backfilled with clean soil and gravel.

We are in the process of obtaining the necessary internal approvals and coordinating the work schedules with both IT Corporation and Envirosafe. We anticipate this work to be completed before January 31, 1988. As soon as a firm date is obtained for this work we will advise you so that you may coordinate inspection activities with the site remediation.

We trust that the above satisfactorily outlines the removal activity planned for this site. Should you have any question or wish to discuss this matter further, you may contact me at the above address or contact Mr. A. Galvan at: 609-778-6277.

Very truly yours,

N. A. DiFranco
Manager,
Environment & Health

cc: Mr. J. R. Crane
Mr. A. A. Galvan

bcc: Mr. L. E. Barron
Mr. T. E. DeBriae
Mr. R. G. Tisch

Form HWM-004
3/87

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
5th Fl., 401 E. State St., Trenton, N.J. 08625

NOTICE OF VIOLATION

ID NO. _____ DATE 12/01/87

NAME OF FACILITY Union Carbide Linden Hydrogen Pump Facility

LOCATION OF FACILITY South Wood Ave Linden N.J.

NAME OF OPERATOR Mr. Galvan

You are hereby NOTIFIED that during my inspection of your facility on the above date, the following violation(s) of the Solid Waste Management Act, (N.J.S.A. 13:1E-1 et seq.) and Regulations (N.J.A.C. 7:26-1 et seq.) promulgated thereunder and/or the Spill Compensation and Control Act, (N.J.S.A. 58:10-23.11 et seq.) and Regulations (N.J.A.C. 7:1E-1 et seq.) promulgated thereunder were observed. These violation(s) have been recorded as part of the permanent enforcement history of your facility.

DESCRIPTION OF VIOLATION N.J.S.A 58:10-23.11(c) Discharge of a hazardous Substance (Hydrogen Carbon)

~~Rate~~ Remedial action should include the excavation of contaminated soils, soil classification, testing for Total Petroleum Hydrocarbons & PCBs and proper disposal of contaminated soil.

Remedial action to correct these violations must be initiated immediately and be completed by _____. Within fifteen (15) days of receipt of this Notice of Violation, you shall submit in writing, to the investigator issuing this notice at the above address, the corrective measures you have taken to attain compliance. The issuance of this document serves as notice to you that a violation has occurred and does not preclude the State of New Jersey, or any of its agencies from initiating further administrative or legal action, or from assessing penalties, with respect to this or other violations. Violations of these regulations are punishable by penalties of $25,000 per violation.

Adolfo D Davis
Investigator, Division of Waste Management
Department of Environmental Protection
(201) 669-3960